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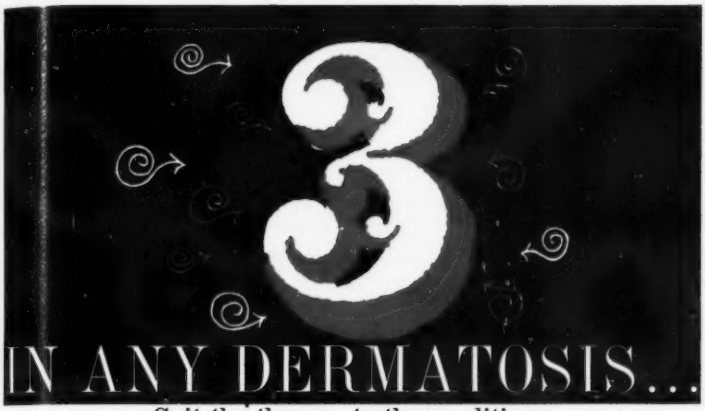

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1. Jones, E. H.: Eye, Ear, Nose & Throat Month. *38*:460, 1959. 2. Lockwood, J. H.: Bull. A. Mil. Dermatologists *4*:2, 1955.

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Bed-Wetting: A Sensible Solution of the Heretofore Unsolved Problem

JAMES M. NORTHINGTON, M.D., *Editor-in-Chief*

►Bed-wetting should be looked upon as an unconscious effort by the child to please. Disapproval should not be expressed, and it should be explained that a dry bed is more comfortable than a wet one. Dry pads and sheets may be placed near the child's bed, and he may be told that he can have dry linen when he wishes.◄

If one may believe school nurses and the most modernistic doctors, pretty nearly every ailment or disfigurement of a child—lisping, a stuttering or stammering tendency, big ears, acne, warts—is apt to be "frustrating," to cause development of "an inferiority complex," to "warp the personality." Far the greater part of this is nonsense. However, it is evident that wetting of the bed persisting to and into school age is prone to have these serious effects, and most doctors of experience have seen many instances bearing out the validity of this reasoning.

Present methods aimed at prevention and cure are largely ineffective, and the habit is not cured but eventually resolves itself. The textbooks continue to advise that belladonna or its alkaloid, atropine, be given on and on (presumably, as long as the mother will give it, or until the habit ceases of itself). In the past few years an electrical apparatus activated by dampness has enjoyed some popularity—and caused some deaths by electrocution.

An observant and thoughtful family doctor[1] offers a means of preventing and curing bedwetting that convinces without trial this medical editor, who throughout his 55 years in medicine has held the skeptical Thomas his patron saint.

This problem may be approached with a new spirit of confidence in the ability to cure rapidly any full-witted child who has a sensible mother. As these cures are effected, write Dr.

1. Jones, R. L., *Nebraska M.J.*, 45:269-270, 1960.

Jones of your experience. It will warm his heart.

The gist of the article:

Bed-wetting continues to be a serious problem as a disrupter of family harmony. For that reason some ideas are offered for your consideration.

Typically, the child has, at some time between the ages of two and three, learned either to go all night without waking or to wake in the middle of the night and empty his bladder in an approved place. Then he is moved to a new neighborhood, started school or moved from kindergarten to first or second grade, or had some other significant change made in his environment, following which enuresis showed up. Typically, the parents, and particularly the mother, responds to this situation with too great alarm. She fears some indictment of herself as a mother, or that something is seriously and organically wrong with the child. Overcoming her shame by degrees, she consults friends, even strangers, for a solution. She may consult a physician.

She tries all of the suggested remedies, including waking the child in the middle of the night and sending him to the bathroom in a half-dazed state, administering sympathomimetic drugs, using electric buzzers activated by wetness, restricting fluids from late afternoon until the next morning.

The simple truth of the matter appears to be that the child, faced with new and different situations which tax his capabilities, is not entirely composed when he goes to bed, so his sleep is shallow, the line between motor activity and contemplation of such activity not well-defined. The child has noted his mother's approval of his voiding at toilet and, seeking this approval, he dreams that he is doing just as mother would wish. Whether his sleep be shallow or deep, he voids and awakens in more trouble, and a cycle begins to perpetuate itself. The more disapproval he receives for wetting the bed, the harder he tries to gain approval in his dreams, and, therefore, the more he wets the bed.

The "cures" that occur in these situations often coincide with the child's learning to sleep even more lightly and thus establishing voluntary motor control which stops the bed-wetting but produces little in the way of healthy rest.

The results have been consistently good when the mother followed faithfully a regimen which this doctor aptly calls a "non-gimmick" solution. She accepts as fact that the bed-wetting is an unconscious effort on the child's part to please. When he awakens

in a wet bed, distressed and apprehensive of her disapproval, she says "It's all right, Honey, I am going to do the laundry anyway and a little more doesn't matter greatly" — and explains that her reason for not wetting her own bed is that it is more comfortable to sleep in a dry bed than a wet one. The child begins to see that use of the toilet is for his own comfort and convenience, rather than for mother's approval. It may be well to place dry pads or sheets near the child's bed, telling him that he may have dry linen when he wishes, and she will help him with it if he wants her to do so.

In five- and six-year old children, the usual period from bed-wetting to dry sleeping, under this management, is four to five days. Several children of eight and nine years who had been wetting the bed for a number of years began sleeping dry a week following the institution of this regimen.

The development of the habit of bed-wetting, with its many embarrassing and distressing effects, may be easily prevented if the child is "allowed to learn" bowel and bladder habits, rather than "trained." Experimentation initiated by imitating older people will, in time (and it takes time), lead the child to the conclusion that being dry is more comfortable than being wet. Praise for conforming or disapproval for failing are the measures by which bowel and bladder habits are learned as something done to please mother. Mother and child will both be much happier if the child learns on the basis of his own comfort rather than on that of mother's approval.◀

Cardiac Rehabilitation in Congestive Heart Failure

HOWARD A. RUSK, M.D.,* and
MENARD M. GERTLER, M.D.,† *New York*

▶*The medical, social, and vocational status of the cardiac patient must be evaluated for individual management. His disease should be explained so that he may readjust his living. Every effort should be made to eliminate fear and to encourage the best life possible within the limits of his condition.*◀

No other country has enjoyed or benefited as much from improved public health measures and advances in medical science as these United States. The improvements in public health measures and in private practice have increased the life span for both men and women since 1900 by 25 years, these largely by advances in prevention of infectious and nutritional diseases and by therapy with antibiotics. The gains achieved in this area, coupled with the increased life span of the individuals has resulted in a great increase in chronic disease, especially of the cardiovascular type.

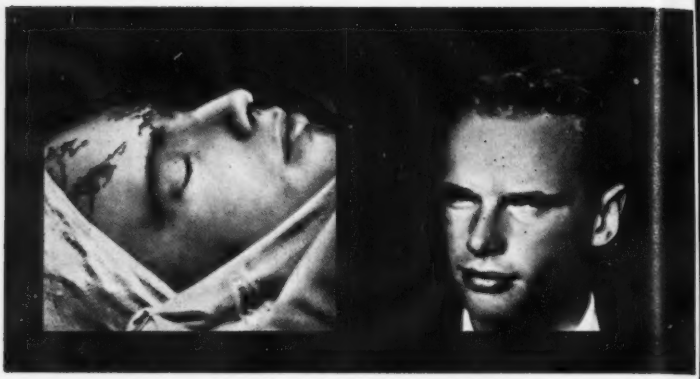
An Older Population Will Require More Rehabilitation

There appears to be little doubt that by 1980, 45 per cent of the population will be over age 45. Accordingly, nearly 90,000,000 individuals will be in an age group in which cardiac disease is most prevalent. Today the cost of heart disease to the nation in terms of merely dollars and cents exceeds four billion dollars annually. This does not include, of course, the intangible loss in happiness, comfort, and equanimity to the individual and family. It is therefore imperative to recognize the present as well as the future needs for rehabili-

From the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center. Supported by National Institutes of Health, Grant H-4035.

*Director and Chairman of the Department of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center.

†Director of Research and Associate Professor, Department of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center.



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ation of the patient with cardiac disease.

What Rehabilitation Is and Its Proved Usefulness So Far

The philosophical concept of rehabilitation has gained wide recognition over the past 10 years. One of the reasons for the rapid advance in this comparatively new discipline is because numerous studies have begun to define scientifically the meaning and practice of rehabilitation.[1,2] The scientific knowledge thus attained in rehabilitation concepts, coupled with the increased physiological and biochemical knowledge of congestive heart failure and a better understanding of cardiac functional classification in terms of ergometry and ergonomics, has permitted a more scientific as well as clinical basis for rehabilitation.[3,4]

Rehabilitation procedures have proven of inestimable value in the hemiplegic,[5,6] and in the coronary artery patient.[7-9] Coronary patients resume their original occupation and continue their duties with less absentee days and as efficiently as do the healthy. In a group of industrial cardiac patients functional class I and II over 70 per cent returned to their former occupations and maintained their former work status.[10]

Rehabilitation of the patient with congestive heart failure involves the same team approach, cooperation and principles established in other areas of rehabilitation. Specifically for the patient with cardiac heart failure the physician, either alone or in cooperation with the other disciplines, must strive for maximal cardiac function with minimum risk to the patient.

Basic Principles

There are three areas in which failure may develop: in energy production, in energy transportation, and in energy utilization.[11,12] According to this concept, the correction of failure is basically the correction of bioenergetics in the areas described. The first basic principle of cardiac rehabilitation is to know the exact condition and to treat the

1. Purdue Farm-Cardiac Seminar, Purdue University, September, 1958.
2. Kottke, F. J., Purdue Farm-Cardiac Seminar, Paper No. 8., September, 1958.
3. Nomenclature and Criteria for Diseases of the Heart, Fifth Edition. The New York Heart Assoc. Inc., 1953.
4. Passmore, R., & Durnin, J. V., *Physiol. Rev.*, 35:801-840,1955.
5. White, P. D., et al., Rehabilitation of the Cardiovascular Patient. McGraw-Hill Book Co., Inc., New York, 1958.
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7. Brown, V. L., *M. J. Australia*, 1:236-240, 1954.
8. Greer, W. E. R., et al., Cardiovascular Rehabilitation, The Blakiston Division, McGraw-Hill Book Co., Inc., New York, 1957, pp. 41-46.
9. Goldwater, L. J., et al., *A.M.A. Arch. Indust. Hyg.*, 5:485,1952.
10. Hellerstein, H. K., & Ford, A. B., *J.A.M.A.*, 164:225-231,1957.
11. Bing, R. J., Harvey Lectures, 1956. Series 50.
12. Gertler, M. M., Some Biochemical Aspects of Experimentally Produced Congestive Heart Failure. Thesis D.Sc. (Med.), N.Y.U. Post-Grad. Med. School, April, 1958.

whole patient. The other five basic principles are:

1. Determine the patient's medical, psychological, social and vocational status.
2. Individualize management including diet, drugs, physical activity, emotional and environmental stress.
3. Explain to the patient the nature of his disease and the prognosis and treatment, assess his capacities and how he can best arrange his life to fit his needs.
4. Make every effort to remove all fear of heart disease.
5. Encourage the patient to live the best life possible within the limits (if any) imposed by his disease.

Procedures

Energy measurements of cardiac work have been calculated directly and indirectly. The direct is by far the more accurate, but cannot be employed routinely or continually. These measurements consist of bioenergetic studies of mitochondrial systems prepared from animals in experimental heart failure[13] and coronary sinus catheterization.[14] The indirect measurements are not without criticism but are practical and useful for the evaluation of the patient for cardiac rehabilitation. The methods employed most frequently for the evaluation of energy costs of myocardial work are based upon *indirect* calculation from oxygen consumption of the total individual during a standard sustained exercise, dye dilution studies and ballistocardiogram.[15,16] The results obtained by researchers[2,16-19] have contributed much to our knowledge concerning the functional capacity of the heart during and following illness. This information coupled with the classic information on the energy cost of various human endeavors[4] has placed cardiac rehabilitation on a scientific and practical basis.

Accurate diagnosis including etiologic, functional and therapeutic appraisal is essential. The diagnosis from an etiologic viewpoint is usually feasible but occasionally there is difficulty in assessing the contribution of each etiologic diagnosis in instances of multiple diagnosis, e.g., hypertension and atherosclerosis in ischemic (coronary) heart disease or rheumatic aortic insufficiency associated with atherosclerotic heart disease. The contributions of thyrotoxicosis, dia-

13. Plaut, G. W. E., & Gertler, M. M., *Ann. New York Acad. Sc.*, 72:515-517,1959.
14. Bing, R. J., & Daley, R., *Am. J. Med.*, 10: 711,1951.
15. Amussen, E., & Nielsen, M., *Physiol. Rev.*, 35:778-800,1955.
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17. Jones, A. M., *J.A.M.A.*, 164:225-231,1957.
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betes, or "hypersteroid" states to the existing heart disease are to be stressed. Occasionally the problem of cardiac rehabilitation cannot be surmounted until these difficulties are controlled.

The functional and therapeutic appraisal is often most difficult to assess. There are at present no satisfactory tests by which one can quantify the cardiac reserve. Experience and judgment are still the best guides. In addition to the general supportive and therapeutic measures such as bed rest, digitalis, low sodium diet, diuretics and vitamins, more specific measures should be adopted for the various etiologic classifications. For coronary heart disease (atherosclerotic) further measures may include reducing diet low in short-chain fatty acids, anticoagulants and proper use of carefully prescribed exercise. Exercise has been shown to be effective as a protection against coronary heart disease in three areas:

1. Increases collateral circulation in the myocardium.[20]

2. Increases the plasmin serum levels, thus aiding in the dissolution of blood clots.[21]

3. Decreases the incidence of atherosclerosis in rabbits fed high-cholesterol diets.[22]

The exercise should be inter- mittent and of not more than 4 calories per minute output.

Hypertensive cardiovascular disease may require the judi- cious use of one or a combination of several of the antihyperten- sive agents, along with the new antihypertensive diuretic agents.

In rheumatic heart disease the specific and judicious use of salicylates and/or steroids dur- ing the early phases of the dis- ease is well established. In ad- dition, preventive use of antibi- otics is practiced.

The cardiac patients with con- gestive failure have been classi- fied[17] into the functional classi- fication as endorsed by the A.H A., and the output in terms of calories per minute has been de- termined. These are summarize in Table 1. The effect of peak sus- tained effort in comparison with intermittent effort is to be care- fully noted, because the same amount of caloric output may b accomplished by a cardiac work- ing intermittently over a longer period without danger while at peak sustained effort the work may be done in a shorter period but the cost could be devastating, e.g., in coronary heart disease.[1]

Choice of Occupation

This requires more than just a casual glance. Intangible fac-

20. Eckstein, R. W., Effect of Exercise on Growth of Coronary Arterial Anastomoses Subsequent to Coronary Arterial Narrowing in Dogs. 29th Scient. Ses., American Heart Association, Cincinnati, Oct. 28, 1956.
21. Ruegsegger, P., et al., *Circulation* 19:7-13, 1959.
22. Kobernick, S. D., et al., *Proc. Soc. Exp. Biol. & Med.*, 96:623-628,1957.

TABLE 1*

THE INTERRELATIONSHIP BETWEEN CARDIAC FUNCTIONAL CLASSIFICATION, PHYSIOLOGIC SYMPTOMS AND ERGOMETRICS

CARDIAC FUNCTIONAL CLASSIFICATION	PHYSIOLOGIC SYMPTOMS	MAXIMUM CALORIES PER MINUTE SUSTAINED	MAXIMUM CALORIES PER MINUTE INTERMITTENT
I.	Patients with a cardiac disorder with limitation of physical activity. Ordinary physical activity causes no discomfort.	5.0	6.6
II.	Patients with a cardiac disorder with slight to moderate limitation of physical activity. Ordinary physical activity causes discomfort.	2.5	4.0
III.	Patients with a cardiac disorder with moderate to great limitation of physical activity. Less than ordinary physical activity causes discomfort.	2.0	2.7
IV.	Patients with a cardiac disorder unable to carry on any physical activity without discomfort.	1.5	

*Modified from Jones.[37]

ors enter, specific for each individual and each type of cardiac disorder. One who has had a myocardial infarction should not be permitted to engage in an activity which may endanger the lives of the public, i.e., bus driver, train engineer, or pilot.

Ergometric and ergonomic studies[4] have permitted the removal of much of the guess work from instructions to patients. Instead of saying to a bed-ridden patient, "Do a little more," the patient may be told (a) to shave in bed (1.0 cal./min.); sit up in bed for an hour (3.0 cal./min.); walk the hall for 15 minutes (4.0 cal./min.). Thus, by giving specific instructions, the patient's progress may be gauged. If symptoms of angina or dyspnea, etc. or signs of tachycardia or increased venous pressure, etc., do not appear with low cal./min., activities, then activities of increased cal./min. are instituted until the patient is completely ambulatory and self-sufficient for the activities of daily living.[23] A few of these activities are summarized in Table 2.

23. Lawton, E. B., Activities of Daily Living. Testing, Training and Equipment. Rehabilitation Monograph X. New York, Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, 1956, p. 59.

Blood pressure that goes up with str
often comes down with SERPASIL

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One reason that many cases of hypertension respond to Serpasil is that many cases are associated with stress. Stress situations produce stimuli which pass through the sympathetic nerves, constricting blood vessels, and increasing heart rate. Hyperactivity of the sympathetic nervous system may elevate blood pressure; if prolonged, this may produce frank hypertension. By blocking the flow of excessive stimuli to the sympathetic nervous system, Serpasil guards against stress-induced vasoconstriction, brings blood pressure down slowly and gently.

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In all grades of hypertension, Se may be used as a background a By permitting lower dosage of potent antihypertensives, Ser minimizes the incidence and se of their side effects.

CI SUMM

*Coan, J. P., McAlpine, J. C., and Boone, J. A.: J. South Carolina M. A. 51:417 (Dec.) 1955. /2820H8

Complete information available on request.

TABLE 2

ENERGY COSTS OF VARIOUS ACTIVITIES AND OCCUPATIONS[1]

ACTIVITY	CAL./MIN.	ACTIVITY	CAL./MIN.
Washing and dressing	2.6	Typing	1.5
Washing face and combing hair	2.5	Inspector	1.2
		Printer	2.0
Sitting	1.6	Shoe repairing	3.0
Standing	2.0	Shoveling	10.0
Sewing, 30 stitches/min	1.1	Postman	10.0
Peeling potatoes	2.4	Planing hardwood	9.1
Polishing floor	4.5	Grass cutting	4.3
Bed making	5.4	Gardening	4.4-5.6
Beating and brushing carpets	7.8	Hoeing	4.4
		Driving a car	2.8
Climbing stairs	6.0-10.0	Golfing	5.0
Walking 3.0 M.P.H.	5.6	Dancing	5.2
Tennis	7.1		
Cycling	5.0-10.0		

Conclusions

In addition to the necessity for meticulous diagnosis, physical investigation and drug therapy, the psychological and emotional factors are of great importance. Confidence based on gradual increased work experience and a close patient-physician relationship are fundamental in establishing the milieu necessary for succesful rehabilitation. As Spiller has so aptly said, "Action absorbs anxiety." In congestive heart disease, action is an invaluable therapeutic measure; as with all potent remedies, all of the skills of the real clinician are required to prescribe them to best advantage.◀

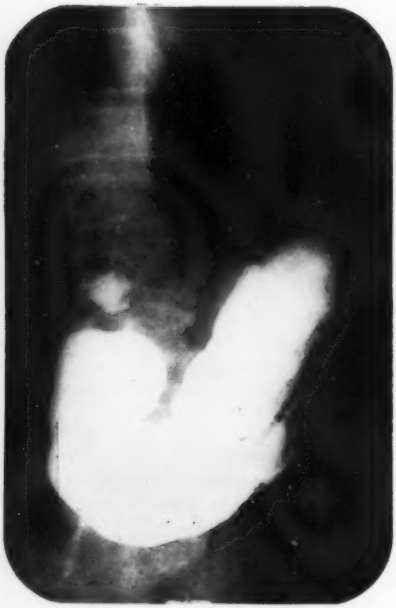
Cancer of Bladder: Treatment

In 57 of 60 cases (48 in men and 12 in women, aged 28 to 87), hematuria was the direct cause of admission. Diagnosis, verified in 55 cases, was papillomatous carcinoma, with invasion of the muscular coat in 35 cases. Radical treatment was possible in 29 cases. Follow-up in 21 for at least 1½ years showed 15 free from recurrence for one to 7½ years (average 3½ years). With early diagnosis and treatment prognosis is favorable. Every patient with hematuria should be examined closely without delay. Results of treatment have recently been improved by a combined treatment of surgical measures and radiotantalum implantation.

Andersen, M., & Glenert, J., *Ugesk. laeger*, 121:1322-1325,1959.

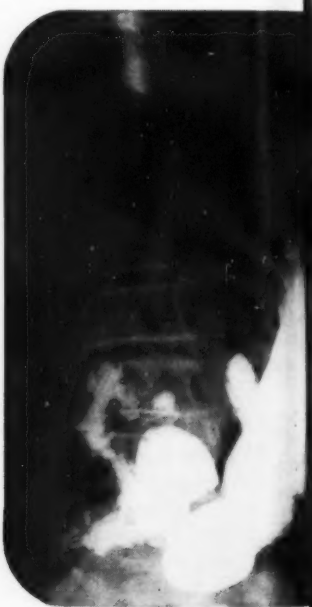
EFFECTIVENESS OF "MUREL"-S.A
IN SPASM VISUALLY CONFIRME

55 year old male with symptoms of partial obstruction of the stomach; nausea and vomiting.



March 1st, 1960: Large dilated stomach with incomplete pyloric obstruction. Etiology undetermined.

Patient placed on "Murel"-S.A. — 2 tablets b.i.d. for one week — plus bland diet. No other medication.



March 10th, 1960: Stomach of norm size and tone. Large ulcer crater now v ualized in the region of previously note pyloric spasm and incomplete filling.

Medical Records of Ayerst Laborator

The Causes of Obesity and Treatment With an Anorexic Agent

EDWARD SETTEL, M.D.,* *Forest Hills, New York*

►*Results of a clinical trial conducted among 75 overweight patients using a preparation containing anoretic, sedative and laxative components and dietary supplements indicate that this agent is an advantageous adjunct with psychotherapy and dietary restriction in weight reduction.*◄

Since the end of World War II the shelves of our food markets have groaned under ever-increasing loads of edibles of the greatest variety and assorted degrees of richness. During this same period the industrial pattern has changed to provide more leisure time and a more sedentary manner of living. The combination of these factors, a vastly enhanced caloric intake with diminished energy output, has produced its natural result in increasing obesity as a national health problem: one of every five adults is overweight.[1,2]

The penalties attendant upon obesity are becoming increasingly recognized. It has been estimated[3] that for each pound of overweight in the 45-55 age group the mortality increases by 1 per cent, and that the mortality from 20-64 in the obese is 50 per cent higher than in persons of normal weight. The morbidity statistics are equally impressive. There seems scarcely a disease in which the prognosis is not rendered significantly worse by the coexistence of excessive fat. Such findings are not surprising in view of the grave effects which obesity has on cardiopulmonary function[4,5] and hepatic efficiency.[6,7] The association of diabetes, gallbladder disease and arterial hypertension with obesity has long been established.

*Medical Director, Forest Hills Nursing Home.

1. Carey, L. S., *M. Clin. North America*, 39: 1701,1955.
2. Dublin, L. I., *New England J. Med.*, 248: 971,1953.
3. Dorfman, W., *New York J. Med.*, 56:1642, 1956.
4. Cole, V. W., & Alexander, J. K., *South. M. J.*, 52:435,1959.
5. Chermack, R. M., *Canad. M.A.J.*, 80:613, 1959.
6. Zelman, S., *A.M.A. Arch Int. Med.*, 90:141, 1952.
7. Westwater, J. O., & Fainer, D., *Gastroenterology*, 34:686,1958.

An increased liability to toxemia of pregnancy now appears to be proven.[8] Other diseases in which overweight has been incriminated as a causative or complicating factor include coronary thrombosis, degenerative arthropathies, nephritis, venous thrombosis and varicosities, atherosclerosis, cirrhosis, embolism and manic-depresssive disease.[9] To these may be added the gravely increased surgical and anesthetic risk posed by the presence of serious obesity.

Pathogenesis of Obesity

1. Psychologic Factors

Overeating may occur as a response to almost any type of emotional stress. Some people resort to food as others do to liquor. They seek subconsciously in overeating to alleviate tension, anxiety, worry and frustration. In others it is an expression of self-love, evoked by a feeling of being unwanted by the family or rejected by society. In children particularly, if the home offers little emotional security food may become the substitute for love and attention. When the child is actually unwanted or subconsciously rejected the mother may unwittingly encourage this attitude by plying the child with food in place of the tenderness she is incapable of giving. Overeating in children may also be prompted by the natural instinct to imitate parents whose eating habits are gross. Compulsion to overeat is also seen frequently in those whose earlier years have been spent in poverty. In these instances it seems likely the habit is based on a subconscious desire to eat while the eating is good since tomorrow there may be no food.

The therapeutic implication of these factors is obvious. In every case of obesity the individual patient's background and personality must be carefully investigated and every effort made to correct underlying psychologic causes. Otherwise the likelihood of maintaining a continuous program of weight control is reduced almost to the point of hopelessness.

2. Physical and Physiologic Factors

Although it is well known that obesity is more common in some families than in others a direct hereditary factor has not been proved. It seems reasonable that "constitutionality," insofar as it affects body-build, may well play some role.

It has been clearly established in laboratory animals that certain areas of the hypothalamus play an important part in appetite regulation, and it has been

8. Witten, S. B., *Obst. & Gynec.*, 12:99,1958.
9. Cappon, D., *Canad. M.A.J.*, 79:568,1958.

postulated that similar appetite regulation centers exist in the human. It has been suggested that the activity of these centers may be linked to the supply of carbohydrate.[10] When the level of blood-glucose that can be phosphorylated and carried into the cells for utilization is low, hunger results and food intake is increased. The evidence to sustain the existence of such a glucostatic mechanism has so far not proved convincing to many workers.

Disturbance of the endocrine glands frequently results in disturbance of fat deposition. In primary hypogonadism in the male obesity is generalized with conspicuous deposits in certain areas. In hypothyroidism generalized obesity is the rule. In Cushing's syndrome, and in medication-induced hypercortisonism, localized fat-deposition is manifested in "buffalo-neck" and "moon-face." However, despite this clearcut relationship, there seems little reason to believe that endocrinopathy plays any major role in the majority of patients coming under treatment for overweight.

Finally, of course, since obesity represents an imbalance between energy intake and energy output, any condition whether due to disease, occupation or habit, which reduces energy expenditure tends to produce a condition of overweight. Thus prolonged confinement to bed, sedentary occupation, wheelchair existence, or similar restriction of activity constitute serious predisposing factors.

Treatment of Obesity

Ideally, the treatment of obesity, as of all disease, is the prevention of its development. In this respect much might be accomplished by a campaign directed towards educating the public as to its causes and dangers and, in particular, the worthlessness of nostrums and reducing devices. The efforts of the individual practitioner are necessarily directed more to the treatment of established overweight than to its prevention. However, particularly in dealing with children, the practitioner should take advantage of his position as far as he can to ensure that family relationships and attitudes are such that the child has the maximal opportunity to grow up into a mature and integrated individual.

When the obesity problem exists both physician and patient must recognize that "Once an obesity problem, always an obesity problem."[11] After weight reduction has been achieved there will always remain the

10. Mayer, J., *New England J. Med.*, 249:13, 1953.

11. Barnes, R. H., *J.A.M.A.*, 166:898,1958.

problem of maintaining the weight at the reduced level.

At the initial interview a thorough history and physical examination should enable the physician to determine the predisposing factors which should receive the greatest emphasis in treatment. The eating and exercising habits of the patient are points to be thoroughly explored. Where there are physical causes these must receive first consideration.

Supportive Measures

In dealing with the obese patient the establishment of satisfactory rapport is vital. Any tendency to be critical of the patient's lack of control should be rigidly suppressed. The physician should be tolerant when the patient occasionally disrupts therapy by going on an eating binge. He should display his sympathy by analyzing with the patient the factors involved in his or her problem, taking the opportunity at the same time to form his own judgment of the patient's capacity for self-discipline and the type of personality support likely to be needed. More intensive psychotherapy is seldom needed. Some patients, however, appear to benefit from group psychotherapy. Here the element of competition bolsters morale and the association with others in a similar difficulty reduces feelings of guilt.

Exercise should be encouraged but not overdone. Judiciously performed it maintains muscular tone and burns up calories. If overdone the increase in appetite it produces is likely to be out of proportion to the energy expended and hence defeats its purpose. Many obese patients have a poor posture, characterized by lordosis of the lumbar spine with compensatory kyphosis of the thoracic spine. Frequently this condition may be much improved within a very short period by the daily performance of appropriate posture-control and set-up exercises. It is generally accepted that it would take 36 continuous hours of walking to burn up one pound of fat.[12]

Dietary Restriction

The negative approach of simply providing a list of foods to be avoided is foredoomed to failure. The patient should be advised as to what foods may be eaten and in what quantities. The basic diet should be high in protein and low in fat and carbohydrate. It should be adjusted to conform as closely as possible with racial and familial eating patterns and with the patient's income. A diet which has proved acceptable to many patients is the "Exchange System Diet" developed by the

12. Mayer, J., *Postgrad. Med.*, 25:325,1959.

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American Diabetes Association and the American Dietetic Association. This diet divides all food into six groups with the items in each group calorically equivalent to one another. The patient can thus make his choice of any foods listed provided he does not exceed the amounts advised by his physician.

With any dietary regimen the patient must get enough protein to avoid negative nitrogen balance; enough vitamins to satisfy daily requirement, and adequate supplies of mineral salts. Vitamin supplementation is advisable. Frequent small meals are preferred over one or two large meals, as they tend to more constant control of appetite. In addition, the appetite stimulation provoked by hypoglycemia is avoided.

Anorectic Drugs

Drugs to lessen appetite have a definite place in the management of obesity. Drug therapy is supplemental to dietary control and psychological support. Nevertheless, when properly used anorectic drugs vastly increase the chances of success, since they act as an automatic curb on appetite and thus make adherence to the prescribed diet easier for the patient. The amphetamines have been most widely and successfully used for this purpose and, in our experience, are well tolerated by 95 per cent of patients. They are believed to produce their effect by lowering the threshold of satiety, so that appetite is satisfied with diminished food intake. In most patients they produce a mild central nervous stimulation. When combined with a sedative this stimulent effect results in a feeling of well-being, without manifestations of over-stimulation such as nervousness, insomnia and palpitations.

It has been my experience that the sustained release form of administration is ideal, as it provides the convenience of once-daily administration, obviates the necessity for the patient to constantly carry medication, and guards against the forgotten dose. A once-a-day preparation taken before breakfast and acting for a 12-hour period best meets the real need. This study of the treatment of obesity in 75 patients utilized a multiple-component preparation* chosen because it appears to meet all the usual medication requirements of the patient on a reducing diet:

1. An adequate dose of anorectic.

2. Moderate sedative effect to allay overstimulation.

3. Supplemental doses of 9 vitamins and 7 minerals to offset

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any dietary deficiency in these elements.

The tablets contain sustained release pellets of d-amphetamine sulfate and the two barbiturates, with a duration of effect of 10-12 hours. The amobarbital and amphetamine have the same rate of breakdown, absorption and effect. The phenobarbital has a more delayed activity and should preclude any disturbance of sleep. The combined barbiturate action obviated excessive stimulation.

The aim was to bring about a weekly weight loss of 1-3 pounds over a long period of time rather than a sharper and more spectacular loss over a briefer period. This type of program permits more gradual accommodation of the liver, pancreas and other digestive organs to the reduced food intake, and facilitates indefinite maintenance of the lower weight level.

Method of Study

A total of 75 patients (20 males and 55 females), aged 16 to 72 years, were studied. The weight was from 10-25 per cent above accepted levels.

On the initial visit a careful history was taken and a thorough physical examination, including complete blood count and urinalysis, was performed. Any deficiency of hemoglobin was corrected. Each patient was analyzed and a long session devoted to explanation of the psychogenic factors involved in each case. The patient was assured that, given cooperation on his or her part, therapy was bound to succeed. Reassurance was also given that the medication, because of its vitamin and mineral content, would prevent any deficiency arising from dietary restriction. Weekly visits were made to the office for discussion and physical check-up, and to provide opportunity for making any necessary changes in diet or medication dosage. The prescribed diets were modified to meet individual needs, and initially were designed to provide 800-1000 calories daily. As treatment progressed alterations of diet were made as indicated.

Initially, one tablet daily to be taken before breakfast was prescribed. If this dosage proved ineffective, or the patient became refractory, a second tablet was prescribed, both to be taken together in the morning.

Results

A satisfactory degree of weight loss was achieved in 69 (92%) of the 75 treated. Of the 6 failures 5 were women and one was a man. In only one was inability to tolerate the medication due to excessive nervous stimulation. In the remaining 5, failure was attributable to deep-rooted emo-

tional problems which were not correctible by ordinary psychotherapeutic support. Three of these patients were subsequently referred for specialized psychiatric care.

Twelve of the patients who had been only moderately overweight at the beginning of treatment discontinued after a month, satisfied with a weight loss of about 10 lbs. In the remainder treatment was continued for varying periods up to 4 months.

The average weight loss for the entire group, regardless of duration of therapy, was 12 lbs. Those who continued beyond 4 weeks were able to lose 15-25 lbs. without great difficulty. The total weight loss in those who dieted consistently for 4 months ranged from 20 to 33 lbs., average 29.4 lbs.

The rate of weight loss was greatest during the first week of therapy, the average being 3.2 lbs. After the first week the average loss was 1.6 lbs. per week, 7.3 lbs. per month. Women tended to setback during the week preceding menstruation, presumably due to salt and water retention. This was generally compensated by enhanced weight loss during the week following the menses.

A total of 21 patients required 2 tablets for effective control of appetite, and 3 were able to tolerate even a third (administered at 2 p.m.) without signs of excessive stimulation. Most of the patients reported an increase of energy and an elevation of mood during the period of medication. Presumably as a direct result of the weight loss, diabetes (present in 3 cases) became more readily controllable, and in 7 cases of arterial hypertension systolic blood pressure was lowered 10-30 mm. Hg.

These patients are still being followed with the objective of maintaining the weight loss achieved. This continuing treatment is based on maintenance of a habit pattern of reduced food intake, continued psychotherapeutic support, and when necessary, repeat courses of therapy for one full week at 6 week intervals.◀

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Surgical Principles: Our Lost Heritage

JOHN B. DAVIS, M.D.,* *Omaha, Nebraska*

►*Improved operational techniques and the development of newer, more efficient specialized therapeutic devices does not obviate adherence to fundamental rules of surgery: establishment and maintenance of asepsis, hemostasis, and supportive circulation have been neglected by some, but should be observed by all surgeons.*◄

Surgical literature of today is heavily slanted toward technical advances, making cardiac operations possible and commonplace. In our efforts to keep abreast of these ideas and discoveries we should still give proper attention to tried and true surgical principles. It seems appropriate to recall the often forgotten or ignored fact that the surgeon's knife is a double-edged sword, that can do harm as well as good. Inability to recognize the indications and contraindications for surgery, failure to accurately assess operative risk, or inattention to the established principles of surgery may result in disaster.

*Department of Surgery, University of Nebraska Medical School.

Asepsis

Before the discovery of the sulfa drugs and antibiotics, strict aseptic technique was recognized as essential to the success of the operation. With the availability of the chemotherapeutic agents many surgeons lowered their guard. With the appearance of resistant strains of the coagulase-positive Staphylococcus aureus, strict adherence to the practices of asepsis has again become a necessity. Strangely, this practice which once was routine has been so neglected that hospitals have formed committees to restudy the problem. Through the establishment of local ground rules the visiting surgeons are being re-educated into good aseptic technique.

Hemostasis

Unchecked internal bleeding, like residual cancer, can do the body no good and may do great harm, up to and including death. Subcutaneous bleeding causes pain, delays wound healing,

favors infection and the development of disabling contractures. The surgeon, having violated the integrity of an intact, large blood vessel, is obligated to control its wasteful spillage of blood by appropriately placed ligatures.

Maintain Vital Blood Supply

The blood supply to those structures not resected should be maintained as fully as possible. Failure to do this may result in malfunction of the organ and its eventual necrosis. With the addition of marauding armies of pathogenic microorganisms this results in abscess formation and often overwhelming infection.

Avoid Physical Tension

Tension applied to body tissues produces edema and necrosis resulting in partial or complete failure to heal. Depending upon the tissues involved, the end results are fecal fistulas, peritonitis, recurrent hernías, even evisceration.

Accurate Anatomical Repair

This is essential in traumatic and planned surgical wounds. The anastomosis of a cut end of the median nerve to a cut end of a flexor tendon of the wrist produces no happy result. Suturing rectus muscle to subcutaneous fat in an abdominal incision is prone to be followed by wound dehiscence, even evisceration. Our bodies function best when the original state is restored.

The Least Foreign Material in Infected Areas the Better

Foreign materials, whether wire mesh or snake venom, are seldom well tolerated by the tissues of our bodies. These are never well tolerated in infected areas, and usually result in abscesses and slough.

Management of Infection

An abscess is a collection of pus surrounded by a dense membrane. Such an isolated culture medium maintained at body temperature is productive of more colonies of pathogenic bacteria than are the artificial broth media incubated in the pathologist's laboratory. Appropriate antibiotics placed over the microorganisms in the Petri dishes in the laboratory can destroy these bacteria. The same antibiotics placed over the glass lids of these Petri dishes make little or no contact with the multiplying pathogens within, and therefore exert no beneficial effect. This can be likened to antibiotic therapy alone for the patient with an abscess—very little of the therapeutic agent reaches the bacterial spawning ground. All abscesses should be incised and drained.

It takes more than an educated

guess to determine which chemotherapeutic agent will be lethal to the offending bacterial army. Cultures of the organisms should be obtained and *in vitro* sensitivity tests run. Penicillin by the gallon will have no better effect on penicillin-resistant organisms than 6000 *r* of external irradiation will on setting a Colles fracture.

Provide Physiologic Cover to Exposed Vessels, Nerves, Tendons and Bone

Prolonged exposure of these structures results in infection and fibrosis. The vessels ultimately bleed, the nerves die, resulting in malfunction of the parts they innervated. Tendons contract resulting in more malfunction, and bone develops disabling osteomyelitis. All of these calamities can be avoided by quickly providing them with the protective tissue covering they require, whether by rotating skin flaps or skin grafting.

Accurate Suturing

Stitches incorporating large masses of tissue have little chance of approximating like tissues, and run the danger of strangulating the trapped structures. With a little imagination the end results can be predicted with a fair degree of assurance. The obvious remedy is the accurate placing of shallow sutures. Continuous sutures have the only advantage of being quicker. It is a poor choice of needlework in potentially infected areas where it may be necessary to remove one or more sutures to allow for drainage. Continuous sutures also prevent expansion and produce stenosis of anastomotic lines in the intestinal tract. This leads to partial obstruction and often to secondary operations.

Leave No Dead Spaces

A dead space in the human body serves no good purpose and favors the development of many undesirable, even dangerous complications, seromas and abscesses heading the list. It takes but a few extra moments to bring these walls into apposition.

Remove Devitalized Tissues

Dead tissues are normally examined by the pathologist and dead human organisms are buried. A living person with dead parts is less than healthy. This is just as pertinent whether it be a gangrenous toe from arteriolar insufficiency, or a muscle traumatized to the point of submission by the surgeon. After a long struggle, painful and costly to the patient, these devitalized tissues will be sloughed out. Cleanly and surgically removed, quick recovery without infection usually ensues.

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*Newcomer, V. D., et al.: A.M.A. J. Dis. Child. 95:585, 1

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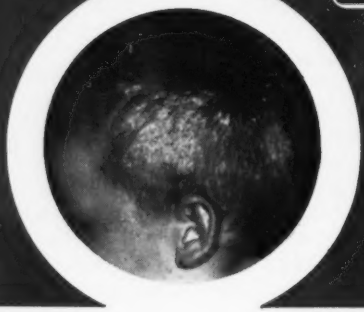
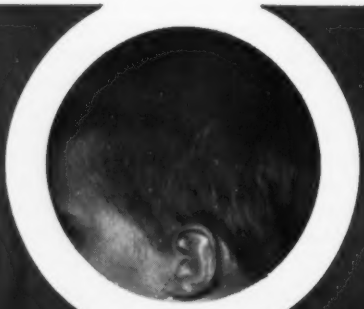


Tinea capitis, before GRIFULVIN.



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Keep Tissues Moist

Body tissues deprived of their moist atmosphere for long will suffer dehydration of their surface cells, which then lose their viability and slough off leaving raw areas. When this happens to loops of small intestine, scar tissue forms, often causing adhesions to adjacent loops and terminating in bowel obstruction.

Plan Incisions

It seems obvious that an incision should be made with some thought to getting good exposure of the diseased part. On exposed parts of the body the resulting scar will be less obvious if placed in an already existing skin wrinkle, such as those commonly seen in the neck when performing a thyroidectomy. Incisions crossing flexion creases at 90° angles contract normally often producing limitation of the normal range of motion. Incisions made in such positions as to destroy the nerve or blood supply of structures to be preserved are mentioned only for purposes of condemnation.

Drains

Drains should be used whenever an abnormal collection of fluid is encountered or anticipated. Drains should be avoided in joint spaces or similar areas where excess reaction is detrimental to function. Rigid drains should be used only when suction is going to be applied.

Accurate Replacement of Blood, Fluids, and Electrolytes

The human body with serious water and electrolyte insufficiencies is unable to function. The patient becomes distended with a paralytic ileus, is oliguric and irrational, and his name appears on the critical list.

Summary

No effort has been made to include all the surgical principles our forefathers in the medical profession so aptly demonstrated, but some of the more commonly neglected ones have been mentioned with some degree of extended poetic license. It is hoped that in our efforts to learn new lessons we will not forget our old ones.◀

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Clinical Value of Orphenadrine Citrate As a Skeletal Muscle Relaxant

RENE CAILLIET, M.D.,* *Los Angeles, California*

►*Orphenadrine citrate has been shown to be a good muscle relaxant and desirable in ambulant treatment. Side effects were minor, consisting of mild atropine-like effects, and occurring chiefly when higher dosages were used. Toxic reactions were not seen among the 75 patients treated in this study.*◄

There has always been a need for a safe and effective agent capable of relaxing skeletal muscles in spasm, whether spastic as a result of a protective mechanism or a neurological sequence. Of the many drugs offered to relax such muscles without producing proportionate weakness, my clinical experience has been generally disappointing for they have either failed to produce a significant degree of relaxation with any dose or the side actions of effective doses, notably flaccid weakness or sedation, have been such as to render the use of the drug impractical. This is a report of my experiences with a new skeletal muscle relaxant, orphenadrine citrate,† in 75 patients. The clinical results have been eminently satisfactory. The study is being continued and expanded.

*Chief, Department of Physical Medicine, Southern California Permanente Medical Group.

†*Norflex*®, Riker Laboratories, Incorporated, Northridge, California.

Methods and Materials

Seventy-five patients, 39 men and 36 women, all manifesting skeletal muscle spasm associated with neuromuscular disease, were studied. In no instance was spasm the direct result of trauma. The age range was 32 to 59 years for the men, and 22 to 57 years for the women. Of these, 32 had discogenic disease with neurological deficit (20 lumbar and 12 cervical), and 18 had lumbosacral strain with no neurologic deficit, but with evidence of restrictive muscle spasm. The remaining 25 patients were treated on the basis of a diagnosis of tension state, either cervical or

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lumbar. These patients exhibited muscle spasm, considered to be on a tension basis. Each patient was carefully examined with special attention to orthopedic and neurologic testing. Roentgenograms were obtained in all.

In patients with discogenic disease with neurological deficit, the clinical findings ranged from lumbar spasm and mild scoliosis plus sciatic stretch pain (Lasegue's sign) to severe scoliosis, straight leg raising restriction, impaired tendon reflexes, and motor or sensory deficit.

Patients with minimal neurological deficit were treated either by bracing, ambulation being permitted, or by brief bed rest. Patients with severe neurological deficit were put to bed for 2 to 3 weeks. When the usual methods of treatment were ineffective, these patients were hospitalized. Most of them ultimately required surgical intervention. The patients requiring hospitalization usually presented sufficient emotional overlay to require sedatives and tranquilizers.

All patients were given orphenadrine citrate. The usual dose was 2 tablets (200 mg.) daily. In some patients the dose was as high as 5 tablets daily.

Results

Results were excellent in the 18 patients with lumbosacral strain, with no neurological deficit. In these patients the usual physical therapeutic regimen was used to supplement the drug and the results were significantly better than when physical therapeutic measures were used alone.

In general, the drug proved to be an extremely satisfactory adjunct in patients with minimal neurological deficit. It was also a very satisfactory adjunct in most of the patients with severe neurological deficit, and permitted early ambulation in these patients. In the patients in whom it was of no benefit, many ended in hospital traction and ultimately surgery. These patients showed no significant response to bed rest, traction, or any medication.

The 25 patients with tension states and no discernible organic disease made a good response, but many of these required tranquilizers in addition.

About 25% of the patients complained of minor side actions, generally blurring of the vision and dryness of the mouth. In spite of significant relief of muscle spasm, many of this group discontinued use of the drug due to side actions. Most of these were patients receiving higher dosage, and the ill symptoms subsided immediately upon discontinuing the drug. Toxic reactions were not seen in any patient. Disabling, flaccid weakness, seen frequently with other

muscle relaxant drugs, was not encountered in these patients.

Chemistry and Pharmacology

Orphenadrine citrate is the citrate of 2-dimethylaminoethanol-2-methylbenzhydryl ether.

Laboratory data indicate that orphenadrine has greater parasympatholytic, antihistaminic, local anesthetic, and antitremor activity than does its chemical relative, diphenhydramine. In laboratory animals clinically effective doses of orphenadrine do not produce block at the myoneural junction, or muscle weakness. Internuncial blocking agents (mephenesin, meprobromate, zoxazolomine) affect crossed extensor reflexes, and prevent strychnine convulsions in experimental animals.[1] This is not seen with orphenadrine. In dogs orphenadrine abolishes post-distemper choreiform movements. These data suggest that orphenadrine may exert an action on central facilitation or inhibition of the extrapyramidal system.

Chronic administration of 10 times the recommended clinical dose to dogs and rats produced no toxic effects.[2] Gross overdosage in humans is not known to have produced any serious toxic reactions.

Although introduced originally as a treatment for Parkinsonism, where it has been particularly effective, notably for relaxing rigidity and elevating the mood,[3,4] it became evident that the greatest usefulness was as a skeletal muscle relaxant.[5,6] Additional uses for orphenadrine that have been reported are in drug-induced Parkinsonism;[3,4,7] to relieve vertigo and dizziness alone or associated with Ménière's syndrome,[8] and in depressions.[9] Our own particular use has been only as a skeletal muscle relaxant.

Our previous experiences with muscle relaxants in ambulatory patients have not been very encouraging. The available drugs have many disadvantages, notably, the high dosage required for therapeutic effectiveness; the effects wear off too quickly, requiring frequent administration and a high incidence of side actions, notably sedation or depression, when a therapeutically effective dose is administered. These objections are largely overcome when orphenadrine is used, since the dosage schedule is very simple, side actions are minor, and the effect of a single dose lasts much longer.◀

1. Cronheim, G., *J. Pharmacol. & Exper. Therap.*, 122:1748,1958.
2. Cronheim, G., Personal Communication.
3. Doshay, L. J., & Constable, K., *J.A.M.A.*, 163:1352,1957.
4. Rosenfeld, S., et al., *J. Am. Geriat. Soc.*, 7:502,1959.
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8. Duursma, S., *M. Times*, 86:573,1958.
9. Robitscher, J. B., & Pulver, S. E., *Am. J. Psychiat.*, 114:1113,1958.

Team Effort in the Treatment of Hemiplegia

GULDEN MACKMULL, M.D.,* *Philadelphia, Pennsylvania*

▶*A therapy group composed of an Internist, a Physiatrist, Physiotherapist, Occupational Therapist, Nurse, Dietitian, Social Service Worker, and Chaplain combine their abilities to rehabilitate the hemiplegic using almost all the patient's time to promote his enthusiastic cooperation and to encourage him in self-care.*◀

Treating the whole patient is imperative in the rehabilitation of the hemiplegic patient. Practical application of this concept is carried out in this hospital for the treatment of chronic diseases by a team approach. The therapy group includes an Internist and representatives from the Department of Physical Medicine and Rehabilitation (a Physiatrist, Physiotherapist, and Occupational Therapist), the Nursing Staff, and the Dietary Division. A Social Service Worker and a Chaplain complete the team, while a coordinator who belongs to none of these groups is chairman of the meeting.

Outline of Therapy Conference

On admission the patient is examined and investigated thoroughly by the Internist after consultation with the family physician. At the initial therapy conference the patient and his problem are discussed by all members of the therapy team, each from the viewpoint of his speciality. Long-range as well as immediate plans are made for improving self-care and the activities of daily living. The social service worker discusses any financial or home situations which might influence the hospital stay. Ultimate disposition on discharge to home, nursing-home or elsewhere will be on the agenda of subsequent meetings. The Chaplain interviews all patients and is available for religious comfort. Often his knowledge of the patient's personality and general reaction is a valuable feature of team treatment.

*All Saints' Hospital for the Treatment of Chronic Diseases, Philadelphia.

FIGURE 1

The patient's remaining capabilities are emphasized and developed by the various team members and their departments. Handicaps and deformities are corrected where possible, compensated where feasible, or accepted where there is no other recourse.

Experience with a Group of Chronically Affected Hemiplegics

Many of the more severely affected among 42 hemiplegics treated at this hospital improved considerably. Results in this series over a two year period indicate that the severely crippled hemiplegics have a better chance for recovery in a rehabilitation center than in a general hospital. Most of these patients had the more chronic phase of hemiplegia. The present description of the treatment for this type of patient supplements a previous description of treatment for patients during and immediately after the acute phase of the disease.[1]

Physical Therapy

Arm and leg exercises are prescribed to strengthen the unaffected as well as the paralyzed extremity. Specific exercises, stretching and heat, whirl-pool and electric stimulation are employed to prevent or overcome contractures.

Mechanical Aids for Arm Involvement

Slings and braces should be used early and as indicated. Arm slings are especially useful in flaccid types of paralysis. An em-

1. Mackmull, G., *Clin. Med.*, 4:33-36,1957.

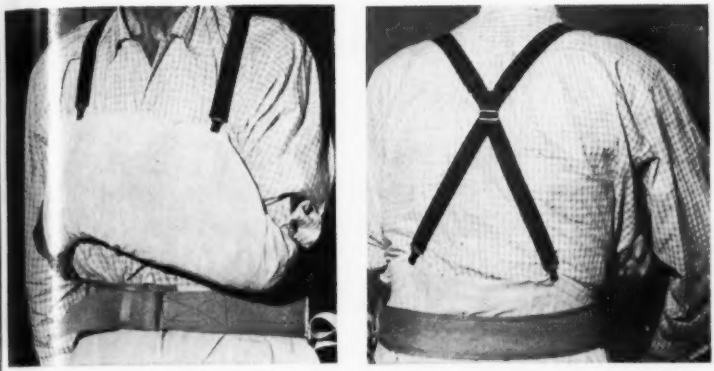


FIGURE 2

velope sling affords good support to the paralyzed arm without undue pressure on the unaffected shoulder. Strings attached to the muslin sheath—12 to 16 inches in circumference and six inches wide — are tied in front of the patient (Fig. 1). An ordinary elastic, adjustable suspender may also be used, obviating the use of string. This is especially useful for men, and for women wearing slacks. Rear clamps are fastened to the trouser top, while the front clamps are attached to the cloth envelope (Fig. 2).

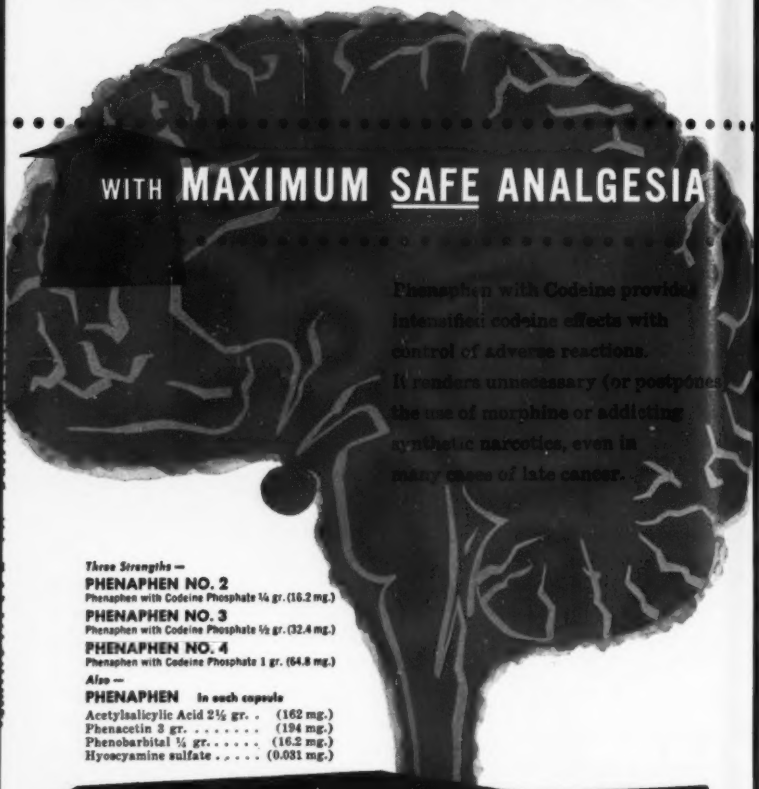
The Goldwater sling consists of a muslin band 2 ft. long with an envelope similar to the envelope sling at one end (Fig. 3), the other end fitted around the affected elbow and secured with a safety pin. The envelope end goes over the shoulder on the unaffected side to support the affected arm in front of the patient. The particular advantage of this type of sling is the adjustability and the absence of pressure on the shoulder on the affected side.

A hand splint is not used routinely. The alleged prevention of hand contractures by this device has proven disappointing.

Mechanical Aids for Leg Involvement

Leg braces are necessary for many patients otherwise chair-bound for life. Long leg braces are indicated in complete paralysis of the lower extremity or in cases of severe leg weakness. A pelvic band often adds needed thigh stability. A knee-lock on the median side of the brace is

Raise the Pain Threshold



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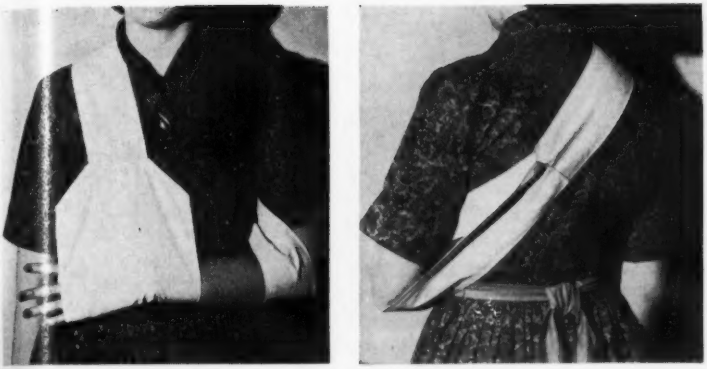

FIGURE 3

for ease in adjusting by the patient. A 90° stop on the ankle joint of the brace is a definite advantage. A short leg brace with a 90° stop at the ankle is used if there is good knee and hip stability. This type of support is important in all cases with either foot-drop or adduction-abduction deformity of the foot. A quarter- to half-inch lift on the sole and heel of the shoe of the unaffected foot prevents dragging the paralyzed leg.

A cane carried in the hand on the unaffected side promotes stability and assurance. Cane-walking is taught after the patient has demonstrated walking ability between parallel bars and with assistance outside the bars.

Activities of Daily Living

All rehabilitation efforts attempt to restore the patient to maximum independence. Training within the scope of his capabilities in as many activities of daily living as possible should be carried out persistently and patiently. On admission the patient's personal, manipulative and occupational skills are graded from 0 (nothing) to 4 (normal). These activities are reviewed and charted periodically. In this way, the degree of the patient's rehabilitation may be graphically shown and evaluated. Numerous ingenious self-aid devices are commercially available for the more severely handicapped.

Drugs in the Treatment of Hemiplegia

Cortisone and hydrocortisone and their modifications provide

psychomotor stimulation and increase the sense of well-being, lessen pain, and often retard the formation of fibrous tissue and subsequent contractures. Patients receiving these drugs often respond to therapy with more enthusiasm and are better motivated toward recovery. Injectable hydrocortisone, either intra- or peri-articularly, affords some relief in painful shoulders, hips or knees. Permanent results, however, have been disappointing.

Amphetamine in patients with no or minimal hypertension may help to overcome apathy, boost motivation, and stimulate efforts at ambulation. Many patients who are listless and almost somnolent initially become wide-awake and eager to perform strengthening exercises.

Chlorpromazine, promazine, perphenazine, thiopropazate dihydrochloride or mepazine used judiciously changes many querulous, irritable, negative patients into enthusiastic and cooperative ones much more ideally suited to therapeutic team endeavors. Use of these drugs is often the deciding factor in the success of therapy. Chlorpromazine has also been useful in the treatment of central pain. Muscle relaxants, such as mephenesin and zoxazolamine, have not relieved pain in spastically contracted extremities.

Occupational Therapy

The importance of this form of therapy would be hard to overestimate. Therapeutic and kinetic exercises can be disguised by devices such as looms, sanding-machines, and bicycles. Individual or group hobbies, crafts, or games offer psychologic lift and relief from boredom. Ingenuity on the part of the entire therapy team is reflected in the many activities of this department.

Review of Cases

A review of the 42 hemiplegic patients treated in this hospital over the past two years reveals that 23 had right-handed and 19 left-handed paresis. A comparison is made between these two groups because right-handed hemiplegics are usually more handicapped than are hemiplegics with left-hand disability. Although the average age for both groups was the same (67 years), the length of hospital stay averaged 102 days for the left-handed and 83 days for the right-handed hemiplegics.

Minimal assistance in walking was achieved in right and left hemiplegics in almost the same percentage (47% in the former, 42% in the latter). However, total failures in walking were 31% in the left and only 13% in the right hemiplegics. This is ex-

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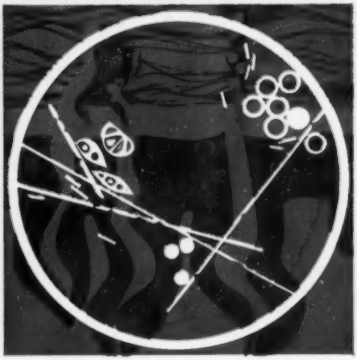
Geigy



(1) Fox, H. H.: Antibiot. Med. & Clin. Therapy 6:85, 1959. (2) Lubowe, I. I.: Antibiot. Med. & Clin. Therapy 4:81, 1957. (3) Murphy, J. C.: Rocky Mountain M. J. 55:53 (June) 1958. (4) Pace, B. F.: Med. Rec. & Ann. 51:370, 1957.

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Geigy

166-60

plained by the larger proportion of severely and permanently crippled left-sided hemiplegics—26% in contrast to 9% of right-sided hemiplegics. On discharge from the hospital the same paradox is noted in the use of the arms; good to normal use of the paralyzed arm was achieved in 30% of right hemiplegics and in only 16% of left hemiplegics. In the "activities of daily living" 75 to 100% of normal self-care was achieved in 39% of the hemiplegics with right side and in 21% of those with left side involvement.

Thus over a period of more than two years the treatment of hemiplegic patients in a special hospital devoted to the treatment of chronic diseases has been successful beyond the accomplishments generally achieved in a general hospital or at home. This advantage is probably due to the devotion of almost all of the patients' time to rehabilitation efforts. Additional skills which a team acquires after working daily with such handicapped patients generates encouragement and enthusiasm for the rehabilitation program.◀

Radiation Therapy of Acne

Although x-ray therapy is anti-inflammatory, its action in the treatment of acne is basically prophylactic, e.g., preventing development of new lesions by suppressing sebaceous gland activity. Single-dose therapy produces only a short period of suppression and is of no value clinically. With fractional therapy, there is a lag period during which the eruption is often aggravated. By the seventh to eighth week, when 525 to 600 *r* have been given, definite improvement is noted and shortly thereafter there is complete remission on the treated side. The untreated side, while sometimes improving, never shows the marked clearing seen after x-ray. Two to three months after the completion of therapy, at a time when the sebaceous glands have regenerated, relapses occur. Permanent suppression of the sebaceous glands cannot be obtained, for even when 1500 *r* of superficial x-ray is given at a single exposure (an amount of radiation invariably producing permanent atrophy and telangiectasia) some sebaceous regeneration is seen.

Protracted suppression of the sebaceous glands can be accomplished safely with fractional therapy at doses of 75 *r* per week for from 10 to 12 weeks.

Strauss, J. S., *Connecticut Med.*, 23:654-655, 1959.

Treatment of Diarrhea Accompanying Acute Gastrointestinal Disorders

MANNING J. ROSNICK, M.D., *Miami, Florida*

▶*A broad-spectrum antibiotic combined with a standard antiperistaltic was administered to 19 patients having gastrointestinal disruption in which diarrhea was a prominent symptom. In 88 per cent of the cases treated, rapid improvement and remission of symptoms occurred within 24 hours of the initial dose.*◀

In treating diarrhea accompanying acute gastrointestinal disturbances, it is not usually practicable to establish the identity of the offending pathogen before beginning therapy. A new antidiarrheal agent that gives rapid clinical improvement and safe sustained activity against a wide variety of pathogens merits investigation.

A new agent containing tincture of opium and neomycin sulfate*, reported to afford prompt, symptomatic relief of the peristaltic frequency and urgency associated with gastrointestinal disorders, as well as a safe broad-spectrum assault against many common pathogens was subjected to a clinical study.

Paremycin was used to treat diarrhea accompanying gastrointestinal ailments in 19 patients ranging in age from 4 months to 78 years. The disorders were diagnosed clinically as acute gastroenteritis with diarrhea (14 patients), mucous or spastic colitis (2 patients), and acute colitis (3 patients). The average duration of the diarrhea, abdominal pain, tenesmus, nausea, or malaise prior to the administration of the preparation was 2 to 5 days. The usual dosage was 1 to 2 teaspoonfuls every 3 to 6 hours, depending on the severity of the symptoms. As soon as the symptoms remitted, the agent was discontinued. No adjunctive therapy was administered during the study.

*Paremycin Elixir,® The G. F. Harvey Co., Inc., New York. Each tablespoon (15 ml.) contains 0.1 ml. of tincture of opium (equivalent to 2.5 ml. of paregoric) and 150 mg. of neomycin sulfate.

Results

Table 1 shows results of treatment according to diagnostic cate-

TABLE 1

RESULTS OBTAINED WITH *PAREMYCIN ELIXIR* IN 19 PATIENTS

INDICATIONS	NUMBER OF CASES	USUAL DURATION OF TREATMENT	RESULTS		
			EXCELLENT	GOOD	FAIR
Acute gastroenteritis (enteritis, diarrhea)	14	6 hours	13	1	
Mucous or spastic colitis	2	20 hours		2	
Acute colitis	3	2 days		2	1
TOTAL	19		13	5	1

Excellent—total symptomatic relief within 12 hours. *Good*—almost complete symptomatic improvement except for mild residual symptoms within 12 hours. *Fair*—partial symptomatic improvement after two or more days of therapy.

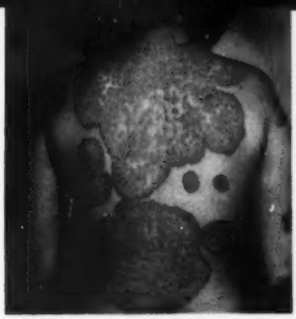
gories. Successful therapeutic results (patients showing excellent and good response) were achieved in 95 per cent of the group. In the remaining five per cent the results were fair.

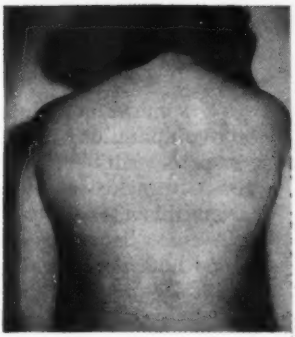
Although the majority of the patients displayed symptoms of acute distress with diarrhea when first examined, 84 per cent responded to therapy within 24 hours. Thus 88 per cent of those who obtained excellent or good responses did so within 24 hours. Seventy-four per cent responded within 6 hours after therapy was started.

Excellent improvement, characterized by rapid relief and disappearance of diarrhea and associated symptoms, was observed in patients of all ages. One girl of 4 months who developed acute colitis with frequent bowel movements, severe cramps, high fluctuating fever, and intermittent vomiting, responded rapidly to one teaspoonful of Paremycin administered every six hours. All symptoms remitted within 36 hours. No after-effects or relapse were observed.

A woman of 48 who developed acute gastroenteritis, manifested by sudden severe nausea followed by vomiting, abdominal cramps, and intense diarrhea. The symptoms of about five hours' duration, responded rapidly to treatment consisting of two teaspoonfuls of Paremycin every six hours. Within four hours, all symptoms remitted, and within 24 hours normal bowel function returned.

In a third patient, a man of 68 suffering from acute diarrhea due to food poisoning, a dosage of two teaspoonfuls of Paremycin every three hours promptly controlled the hyperperistalsis. Within six to eight hours, the patient was symptom-free. No relapse or side





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Available: Alphosyl Lotion in 8 oz. bottles; Alphosyl-HC (hydrocortisone) in 4 oz. bottles.

1. Welsh, A. L.: Report, Conference On The Management of Chronic Dermatoses, University of Cincinnati College of Medicine, Cincinnati, Ohio, November 4-5, 1959.

REED & CARNRICK, Kenilworth, New Jersey

effects were noted.

No side effects were observed in any of the 19 patients except for one instance of slight drowsiness that remitted when the dosage was reduced. No instance of secondary bacterial infection developed and no systemic or allergic reaction was observed in any of the patients.

Discussion

The immediate effectiveness of the preparation, its safety, and its potent antibacterial action are three conclusions that emerge from this clinical study. An 84 per cent effective response within 24 hours, in a wide variety of clinically diagnosed enteric infections, represents a gratifying response. The complementary action of tincture of opium and neomycin sulfate make it an extremely useful preparation, not only for obtaining prompt symptomatic relief, but for achieving rapid, safe, effective control of the offending pathogens. The reduction of peristalsis through the action of tincture of opium increases the effectiveness of neomycin, which remains in the intestinal tract for a longer period of time. In addition the concentrated antibacterial action of neomycin within the bowel is prolonged, because it is not readily absorbed from the gut.

Clinical studies have affirmed the extensive antimicrobial and antibacterial range and the *in vitro* effectiveness of neomycin against most enteric bacteria.[1,2] Neomycin is the most effective antibiotic for use in treating infantile diarrhea, because the most common enteric organisms do not readily develop resistance to it.[3] The broad-spectrum activity of neomycin against the majority of intestinal pathogens (including many that have proved resistant to other antibiotics) is particularly important to the practitioner, since bacteriologic culture with isolation of a specific organism is possible only infrequently before instituting treatment.

Summary

Paremycin, a new broad-spectrum antibiotic and antiperistaltic agent, was used to treat 19 patients suffering from diarrhea in a wide variety of gastrointestinal disturbances. The preparation was administered in a dosage of one to two teaspoonfuls every three to six hours and demonstrated excellent or good results in 95 per cent of the patients; 84 per cent of the patients were symptom-free within 24 hours. Because neomycin is not readily absorbed from the intestine, its localized action is enhanced by the complementary activity of tincture of opium, which controls

1. Waisbren, B. A., *Practitioner* (Lond.) 1051:39-46,1956.
2. Kadison, E. R., et al., *J.A.M.A.*, 145:1307-1312,1951.
3. Barr, F. S., *Antibiot. Med & Clin Therap.*, 2:324,1956.

the hyperperistalsis associated with diarrhea. Symptomatic improvement in almost all cases was noted within six hours after the first dose. The agent was well accepted and tolerated by patients of all ages, and no allergic, systemic or topical side reactions were observed.

In this clinical study, Paremycin proved to be a valuable and superior agent for the treatment of diarrhea and gastrointestinal disorders.◀

Injuries to the Knee

Injuries to the ligaments probably comprise the majority of injuries to the knee, next those of the cartilage. A light blow on an unstably positioned knee can tear a ligament completely. It is easier to diagnose a tear immediately after it has happened than at a later period. If the knee cannot be straightened, investigation is required. The knee in extension, if there is much lateral motion, means injury to a collateral ligament or a fracture.

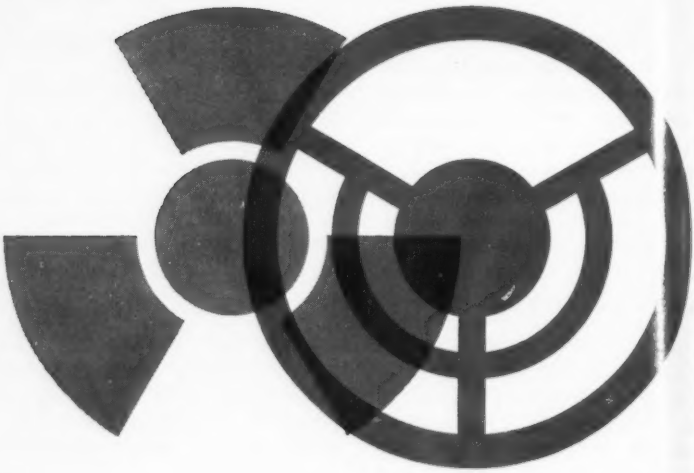
A minimal tear will probably require only rest for a few days, a tear of more extensive degree will require immobilization and a cast. A complete tear requires surgical repair. After a ligamentous injury requiring cast or surgery, the patient will probably be immobilized for a year. After minimal tears are treated by heat and rest, ambulation may be resumed as soon as the soreness subsides.

If there is limitation of motion in the knee, or if the patient cannot extend or flex it completely immediately after the injury, the cartilage is usually torn. This requires an operative procedure, undertaken as soon as possible.

To test for tear of the cruciate ligaments, the knee is flexed to 90°. If the tibia can be forced forward, the anterior cruciate ligament is torn, and if it will go backward the posterior cruciate ligament is torn. These injuries require operative repair, and tests should be done soon after the patient is injured.

Fluid should be withdrawn from a swollen knee and the knee compressed. If the fluid is grossly bloody, there has been extensive tearing inside the joint. A fall on the knee without twist or a blow may cause a collection of fluid between the skin and the knee joint within the bursa. In these cases, ambulation may be resumed a few days following withdrawal of the fluid and compression of the knee.

Ferguson, W. B., *J. Indiana M.A.*, 52-1768-1770,1959.



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Cesarean Total Hysterectomy

GEORGE T. SCHNEIDER, M.D.,* *New Orleans, Louisiana*

►*Indications for Cesarean hysterectomy are patients with pathologic conditions and those requesting sterilization after having had multiple sections. Technique is similar to that for standard abdominal hysterectomy. Incidence of postoperative complications is the same as after standard abdominal hysterectomy.*◄

Modern trends in gynecologic and obstetric surgery have altered the indications for hysterectomy, e.g., in recent years there has been an increasing tendency to remove the uterus incidentally whenever reproductive function is to be destroyed by bilateral salpingo-oophorectomy, bilateral salpingectomy, or tubal ligation. The popularity of hysterectomy in association with Cesarean section has also increased, the total procedure largely having replaced the subtotal procedure for this as for the nonpregnant patient. Simply by removing the cervix, an immediate 5 per cent reduction in the incidence of cervical cancer can be effected. This is the average incidence of cancer of the retained cervical stump in most reported series of cancer of the cervix.

*From the Department of Obstetrics and Gynecology, Ochsner Clinic, New Orleans.

Hysterectomy Now More Commonly Done

Since 1946, whenever removal of the uterus was indicated at the time of Cesarean section, it has been our policy at the Ochsner Clinic to perform total hysterectomy.

Experience with this operation in 84 patients during the ensuing 14 years has indicated its safety and desirability in selected cases. The uterus that has been subjected to repeated Cesarean sections with tubal ligation or salpingectomy is liable to cause such troublesome symptoms as hypermenorrhea and polymenorrhea, dysmenorrhea, pelvic pain, and dyspareunia. In a recent study of 402 post-Cesarean patients, hysterectomy was ultimately necessary in 27.7 per cent.[1] In most of these patients,

1. Weed, J. C., *Obst. & Gynec.*, 34:780,1959.

symptoms could be attributed to uterine scarring, extensive postoperative adhesions with resultant fixation of abdominal contents to the uterus or adnexa, or fixation of the uterus to the lateral or anterior abdominal wall. This resulted in disturbed adnexal function, failure of the uterus to involute, or both. In another study,[2] it was shown radiographically that various degrees of uterine deformity resulted from multiple Cesarean sections in all of a series of 43 patients.

Indications

The indications for Cesarean hysterectomy may be grouped into two categories:

1. Patients with definite pathologic conditions, such as large uterine fibroids or significantly abnormal bleeding, or those with an inadequate scar or weakened uterine tissue deemed unsafe for future pregnancies.

2. Those who have had multiple sections and request sterilization.

The inadequate scar constitutes an arbitrary indication and should be carefully considered before the uterus is removed. Occasionally, when the scar alone is thin and further pregnancy is desired, excision or debridement of the scar will result in a more satisfactory uterine wall.

There is a question as to how many Cesarean sections a woman may be permitted to undergo. The answer depends upon many individual circumstances, but especially upon the condition of the uterus, abdominal cavity, and abdominal wall. Patients may have a uterus that is in good condition after five or six successful Cesarean sections; however, after the uterus has been subjected to repeated surgical procedures, the limit of safety is exceeded. "Section saturation point" is the term coined to describe this condition and most authorities agree that no more than three or four Cesarean sections should be permitted on any woman.

The second group of indications relates to patients, with history of multiple Cesarean sections, requesting sterilization. During the prenatal period, the patient expresses a desire for sterilization at the time of section, the problem is discussed thoroughly with her and her husband and the question of hysterectomy versus tubal ligation considered. This preoperative discussion is as important in the pregnant as in the non-pregnant woman. The physiology and function of the pelvic organs are explained and any fears and misapprehensions, especially about sexual problems, are allaye

2. Poidevin, L. O., & Bockner, V. Y., *J. Obst. & Gynaec. Brit. Emp.*, 65:278,1958.

Postoperative study of women who had a clear understanding of these matters preoperatively has revealed absence of functional loss of libido and other problems.

Technique

The technique of Cesarean total hysterectomy is similar to that of standard abdominal hysterectomy. Spinal anesthesia is usually preferred. Although dissection may be prolonged by dense adhesions to the bladder from previous scars, the bladder flap of peritoneum is usually more easily handled in the pregnant state. An indwelling catheter inserted in the bladder preoperatively should help prevent vesical injury.

A transverse or longitudinal uterine incision, depending upon the surgeon's preference and the degree of scarring, is made in the fundus. After the baby is delivered a refined aqueous preparation of oxytocin (Pitocin) may be injected into the uterus to facilitate placental removal and uterine contraction. A chromic running suture, used to close the uterine incision, aids in obtaining maximum hemostasis. If uterine contraction is efficient, a considerable amount of blood may be diverted back into the circulation from the uterine fundus.

The round, utero-ovarian, and broad ligaments are clamped close to the uterus, cut, and tied. After the uterus is firmly contracted, the uterine vessels are clamped, cut, and ligated separately. The vagina is opened posteriorly just below the cervix and the entire uterus is removed. If difficulty is encountered in locating the lower extension of the cervix, the cervical canal or lower uterine segment may be opened posteriorly and a finger introduced through the canal to palpate the cervico-vaginal junction directly.

The vaginal vault is approximated with a continuous catgut suture. To insure adequate support the round and utero-sacral ligaments are incorporated into the angles of the vault. Peritonealization is easily accomplished with the usually generous bladder flap of the peritoneum. The abdomen is closed in layers with interrupted cotton sutures.

Removal of the uterus at the time of Cesarean section does not substantially increase the duration of the operation. The average operating time from incision to complete closure in 84 patients was 80 minutes.

In pregnancy, the vascularity of all tissue is greatly increased and it is important to use smaller bites of tissue in clamping. The hypertrophied broad ligaments and other uterine attachments routinely require more clamp-

ing and ligating, as the uterus is removed. If the surgeon is meticulous in his technique, excessive bleeding during operation should not be a problem in most patients. Fifty-five per cent of the 84 patients in this series required no blood transfusions and in only three was more than one pint necessary. Antibiotics are not given routinely, and ambulation on the first postoperative day is usually recommended.

Postoperative Complications

The incidence of postoperative complications is about the same as after Cesarean section alone or hysterectomy in nonpregnant women. Careful preoperative preparation of patients, similar to that before any elective surgical procedure, assures a minimum of unforeseen problems arising during operation. Correction of anemia is one of the more important prerequisites. The routine use of a recovery room adjacent to the operating room during the immediate postoperative period has contributed greatly to reduction in the early postoperative complications.

The morbidity in this group of patients was 5 per cent, which compares favorably with other recent reports. Urinary infection developed in two patients; one required re-operation shortly after complete hysterectomy because of a bleeding broad ligament vessel, and postoperative thrombophlebitis developed in one. No injuries or other complications of the urinary or intestinal tract were noted and no deaths occurred.

Neonatal Mortality

In planning elective Cesarean hysterectomy, premature delivery of the fetus must be avoided. Sterile palpation of the cervix at intervals in the last month of pregnancy may be helpful in determining complete fetal maturity, e.g., a long closed cervix would certainly indicate that labor was not imminent in a patient whose menstrual history might lead to the premature scheduling of a section. When this information is added to other estimations of fetal maturity such as roentgenographic evidence and date of fetal movement, the chance of premature delivery should be minimal.

Results

Evaluation of any surgical procedure depends a great deal upon the long-term follow-up. Most of the patients in this series were followed for a considerable period, some for as long as 10 years. They have repeatedly expressed their satisfaction with the results of the operation. No emotional conflicts have arisen as a result of removal of the uterus, there has been no evidence of prema-

ure ovarian failure, and repeated examinations have failed to disclose enlarged adnexa. All patients have had normal and well supported vaginas, no incisional hernias have developed postoperatively, and no patient has complained of dyspareunia who did not mention it as a complaint preoperatively.

If the aforementioned indications are adhered to, the patient and her husband are prepared preoperatively, and proper surgical technique is employed, Cesarean total hysterectomy is a logical advance in modern obstetric surgery.[3]◀

3. Davis, M. E., *Am. J. Obst. & Gynec.*, 62: 838,1951.

The Use of Medicinal Iron in Pediatric Patients

Either ferrous sulfate or ferrous gluconate is suitable for administration to children. Neither molybdenum nor cobalt in combination with iron increases the effectiveness of the iron, and the cobalt may cause a goitrogenic effect, particularly when given to infants or to pregnant women.

In the first three years a daily dose of 60 to 75 mg. of elemental iron should be given in two to three divided doses between meals. For older children one or two tablets of ferrous sulfate 0.2 gm. or ferrous gluconate 0.3 gm. should be taken daily at meal time.

Rarely, a child with iron-deficiency anemia fails to tolerate and respond satisfactorily to iron salts given by mouth. Toxic reactions following parenterally administered iron do occur and may occasionally be severe. There is no increase in the rate of hemoglobin production in patients treated with parenteral iron when compared to those treated with oral iron. This form of iron medication involves unnecessary expense and pain to the patient.

The hemoglobin response to iron medication in the anemic child is seen five to seven days after its initiation, then proceeds at a rate of 1.0 gm.% per week. Failure of the patient with iron-deficiency anemia to respond to iron therapy is due to erroneous diagnosis, too small amounts of iron prescribed, failure of the patient to take the medication, or administration of iron with large amounts of phosphorus-containing food such as milk. Iron is to be taken for six to eight weeks after the hemoglobin has reached normal levels.

Smith, N. J., *Wisconsin M.J.*, 58.620-621,1959.

New Coronary Vasodilator Preparation

BENJAMIN J. MASSOUDA, M.D.,*
McHenry, Illinois

▶*The pharmacologic properties of the nitrates in the treatment of angina pectoris are well known. A new form, utilizing both the slow- and fast-acting effects of 2 nitrate compounds, provided a convenient dosage form for the patient and substantially reduced the number of attacks and their severity.*◀

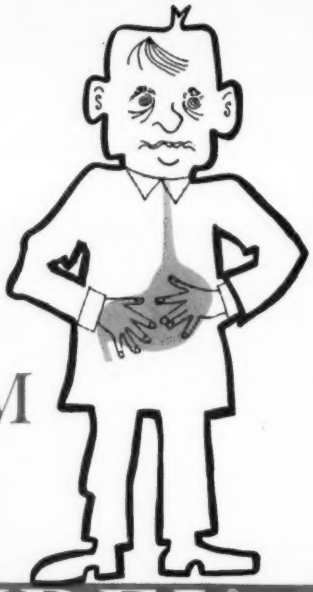
The value of nitrates and nitrites in the treatment of angina pectoris has been known for years. Glyceryl trinitrate was discovered by Sobrero in 1847, while amyl nitrite was first employed in medicine by Guthrie in 1859. Both compounds were introduced in the 1860's for the treatment of angina pectoris.[1] More recently other nitrate compounds have been revaluated which permit a slower release of the nitrate ion, thus effecting a more prolonged action. One such preparation is pentaerythritol tetranitrate.

The rapidly acting glyceryl trinitrate has been combined with pentaerythritol tetranitrate for the purpose of combating the anginal attack immediately and, through the slower acting component, preventing or delaying subsequent attacks over a greater period of time. The clinical results observed with a combination of these coronary dilators form the subject of this report. The preparation is referred to herein as NPT.

Pharmacologic Action

The basic action of nitrate in the body is to relax smooth muscles, especially those of the finer blood vessels. The spasmolytic action of nitrite upon blood vessels and other organs is independent of innervation. The drug acts on smooth muscles with undiminished difficulty after section of the cerebro-spinal axis as well as on peripherally denervated fragments and excised organs. The vasodilator action is not blocked by atropine. Muscles relaxed by

*McHenry Medical Group, McHenry, Illinois.
1. Goodman, L. S., & Gilman, A., The Pharmacological Basis of Therapeutics, Second Edition, p. 730, MacMillian Co., New York, 1955.



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nitrite are not paralyzed and motor impulses can still exert their characteristic constrictor effect. In effect, smooth muscle tone is reduced by nitrite, but the ability of the muscle cell to contract maximally in response to adequate stimulation remains unimpaired.

The most prominent and important action of nitrite is to dilate the smaller blood vessels. These include arterioles, capillaries and venules, but the effect is more marked on the post-arterial vascular bed. The rate of capillary blood flow is increased. For example, a definite increase in the rate of blood flow through the capillaries of the nail fold has been observed in patients receiving as little as 0.2 mg. of nitroglycerin.[2] Oscillometric measurements also indicate the increase of pulse volume after nitrite.

The intensity and duration of action of nitrite varies in the different vascular beds of the body. The post-arteriolar vessels, capillary and venules are most susceptible to nitrite, which characteristic may permit the induction of peripheral vascular collapse.

Effect On Coronary Vessels

The nitrites relax the coronary vessels. This action has been well demonstrated in a variety of experiments involving the coronary arterial tree of man and animal. This action forms the basis for the chief therapeutic use of nitrite, namely, the relief of pain in angina pectoris. Coronary vasodilation is said to outlast the effect of the drug on other vascular beds. Coronary blood flow is increased in spite of the concomitant fall in aortic and coronary blood pressure. Many investigators have confirmed this enhancement of coronary blood flow since the early experience of Francois-Franck[3] in 1903. In animal experiments in 1940 it was demonstrated that nitroglycerin enhanced coronary blood flow by 30 to 100 per cent.[4] Comparative studies reported in 1947[5] indicate that nitroglycerin and amyl nitrite are less effective than papaverine or aminophylline in enhancing coronary blood flow; however, an advantage of nitrite over the xanthines is that it decreases cardiac work, whereas the latter may increase cardiac work and thus offset the value of an increased coronary blood flow. The coronary vasodilation produced by nitrite may improve the blood supply to the myocardium which under certain conditions may be impared. Myocardial ischemia, the functional basis of

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the pain of angina pectoris, may thus be improved with resultant relief to the poorly oxygenated myocardium. The pooling of blood in the post-arteriolar vessels by the action of nitrite may offer the added advantage of a diminished venous return to the heart which lessens the immediate work load.

The normal electrocardiogram is not significantly altered even by full therapeutic doses of nitrite. Apparently the coronary circulation remains adequate in patients without coronary disease. On the other hand, in patients with hypertension and left ventricular hypertrophy, the administration of the hypotensive doses of any of the nitrites may result in a more normal appearing ECG.

Nitroglycerin in therapeutic doses exerts a most favorable effect in response to exercise as recorded by the ECG in those who without the drug demonstrate a poor response.[6] Pentaerythrityl tetranitrate has also been shown to have a similar desirable effect in those with coronary insufficiency.[7]

Absorption Rate and Excretion

Amyl nitrite, a very volatile drug, is readily absorbed from the lungs and is administered only by inhalation. Nitroglycerin is usually administered in the form of tablets placed under the tongue, and although not decomposed by the gastric juice, it is absorbed more efficiently by the sublingual than by the intestinal route. Since this absorption is rapid, the drug acts quickly and for a rather short period of time, perhaps one hour.[8] Erythrityl tetranitrate and mannitol hexanitrate are slowly absorbed from the intestinal tract.

Since pentaerythrityl tetranitrate is chemically more stable than nitroglycerin and erythrityl tetranitrate, it liberates nitrates more slowly and is absorbed from the gastrointestinal tract at a slower rate than either.[9] This characteristic accounts for the delayed onset and protracted duration of their action. Nitrites and nitroglycerin disappear rapidly from the blood stream and their concentration in the blood seems to bear no direct relation to the duration of the vasodepression.[10,11]

Certain precautions are indicated when nitrites are employed. The patient with marked anemia should use nitrite with caution inasmuch as excessive doses of this form of medication may lead to methemoglobinemia. Increased intra-ocular pressure is also an indication to use nitrite with care. If the nitrites are used as a diag-

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*Archambault, R.: Canad. M. A. J. *81*:28, 1959.

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nostic aid in patients with acute coronary thrombosis, care must be exercised in regard to dosage because of their hypotensive action. The nitrites should not be employed in the rare person who manifests an idiosyncrasy characterized by a syncopal attack.

Materials and Methods

Three dosage forms of NPT* were employed in this investigational study for the patients suffering from angina pectoris. These were NPT 5402, NPT 5524 and NPT 5403. Each tablet of the different lots contained 0.4 mg. of nitroglycerin, whereas the amount of pentaerythrityl tetranitrate in each tablet of the three lots was 10, 15, and 20 mg. respectively.

In each lot the nitroglycerin in the outer layer was separated by a lemon-flavored signal layer from the core of the tablet containing the pentaerythrityl tetranitrate. A tablet, when used for the acute anginal attack, was held under the tongue until the lemon flavor was detected and had disappeared, at which time the patient swallowed the remainder of the medication. This permitted the immediate action of the nitroglycerin to be followed by the slow and prolonged action of the pentaerythrityl tetranitrate.

*The dosage forms of NPT were supplied through the courtesy of the Medical Research Department of Winthrop Laboratories, New York. NPT 5524 now bears the trademark "DILCORON."

In the event the patient received the medication as maintenance or prophylactic therapy the tablet was swallowed at the time it was taken. Nitroglycerin thus absorbed has a minimal effect.

Clinical Applications and Results

The patients used in this study were those with a history of angina pectoris, with or without hypertension and with no evidence of a recent coronary thrombosis. Fifty cases were treated with NPT 5402, 16 with NPT 5403 and 79 with NPT 5524. The drugs were used separately in these cases except for a group of 25 patients who were alternated on the various compounds for purposes of comparison.

Most of the patients studied made a satisfactory clinical response to the combination. Particularly noticeable was the rapid action evidenced by relief of pain followed by a prolonged period of freedom from attack and an increase in exercise tolerance.

With NPT 5402, which contained 10 mg. of pentaerythrityl tetranitrate, it was found that most of the patients were not well managed, whereas when these patients were placed on NPT 5403 (with 20 mg. pentaerythrityl tetranitrate) the amount of medication was more than required in most. On the other hand, NPT 5524, which contained

TABLE 1

EFFECT OF NPT PREPARATION UPON
THE NUMBER OF DAILY ANGINAL ATTACKS

MEDICATION	NUMBER OF PATIENTS	NUMBER OF ATTACKS PER DAY
No drug	25	10 - 15
NPT 5402	25	5 - 10
NPT 5403	15	2 - 3
	10	3 - 5
NPT 5524	15	2 - 3
	10	4 - 8

5 mg. of pentaerythrityl tetranitrate, produced highly satisfactory clinical results in the majority of cases.

As shown in Table 1, 25 patients were initially given no medication, during which period they experienced 10 to 15 anginal attacks a day.

When these patients were given NPT 5502, their attacks were reduced to five to 10 per day. Further reduction in the incidence of attacks was obtained with NPT 5524 and NPT 5403. However, as explained above, the latter dosage form appeared to be unnecessary for the greater number of patients since the number of attacks could not be reduced significantly with the larger dose. It was for this reason that 25 patients were eventually placed on NPT 5524 with gratifying results.

Summary and Conclusions

A brief report is given on the clinical effect of a combination of rapid acting nitroglycerin and long acting pentaerythrityl tetranitrate in a single especially layered tablet form as employed in the management of angina pectoris.

A total of 115 cases were treated with three dosage forms of the medication. Although each form was of value, the most practical and effective form was determined to be the tablet which contained nitroglycerin 0.4 mg., with pentaerythrityl tetranitrate 15 mg. (NPT 5524). Dosage forms with a lesser or greater amount of the latter drug either did not control the patients satisfactorily or did not materially increase the therapeutic efficacy. One notable advantage of this tablet is the convenience it offers to the patient, particularly in the event of an acute attack, since the flavored middle layer gives assurance that he has received the full

nitroglycerin effect before the tablet is swallowed for its prolonged and preventive action. This latter effect gives the patient additional reassurance as well as specific therapeutic value.

NPT 5524 was found to be effective for the control of the acute attack as well as in the prevention of attacks through the prolonged action of the pentaerythryl tetranitrate. In 25 cases used for a comparative study, the number of daily attacks was reduced by 55 to 80 per cent. In addition an increase in exercise tolerance was noted in a number of patients.◀

Cataract Surgery: Effect of Early Ambulation

The effect of postoperative activity on the incidence of immediate postoperative complications was studied in 3 series of patients treated in a 2-year period. All operations, done by the same surgeon under the same conditions with little variation in technique, were done quickly with minimal instrumentation and trauma. Corneoscleral wounds were not sutured, the edges being held in apposition by a bridge of conjunctiva about 2 mm. wide and by a firm eye bandage. Only the operated eye was occluded. The first 1000 patients were lifted from the operating table to a wheeled stretcher and then into bed, and were required to stay in bed for 8 days. The next 1000 were transported in the same way but were required to stay in bed only 24 hours. The third 1000 were assisted from the operating table and then walked to their beds, being allowed out of bed as they wished.

The radical increase in postoperative activity did not result in radical increase in postoperative complications nor affect the visual results, good or useful vision being obtained in 94.5, 92 and 94.0% of patients in the groups. Although minor increases were noted in the incidence of some complications (striate keratitis, delayed formation or nonformation of the anterior chamber, bulging wound, iris incarceration) there was no significant difference in the incidence of early hyphema (11, 10.3 and 11.9%), late hyphema (5.0, 5.5 and 4.9%), iris prolapse (1.2, 2.0 and 1.8%) or choroidal hemorrhage (0.5, 0.5 and 0.4%).

Christy, N. E., *Am. J. Ophth.*, 49:293-30 1960.

The Place of Corticosteroids in the Therapy of Surgical Shock

GEORGE B. SANDERS, M.D.,* *Louisville, Kentucky*

▶*Corticosteroid therapy may mitigate clinical emergencies caused by hemorrhage or electrolytic imbalance by its adrenergic blocking effects in larger doses. During this interim fluid replacement, antibiotic therapy and additional lifesaving measures may be advanced and unevaluated phenomena postponed.*◀

Because of the well-known propensity of patients with adrenocortical insufficiency to manifest severe shock from even trifling trauma, it has been tempting to hypothecate a role for corticosteroids in the treatment of shock as it occurs clinically.[1-3]

While it is true that, in patients with pre-existing adrenal insufficiency, any routine of shock therapy that does not include adequate corticosteroid administration is likely to fail, carefully controlled, critical laboratory experiments in animals, and clinical investigations in humans have shown that:

1. Corticosteroids are valuable in the treatment of endotoxic or bacteremic forms of shock.[4]

2. Corticosteroids are valueless in the treatment of acute, irreversible, hemorrhagic shock, and allied forms of traumatic shock of comparable severity.[5-7]

3. Adrenal exhaustion or insufficiency does not ordinarily develop in shocked but otherwise normal human beings, even though shock is prolonged to irreversibility.[8]

A few recent investigations suggest that corticosteroids may have a place in the treatment of shock which is threatening to become irreversible because of in-

* Associate Professor of Surgery, University of Louisville Medical School.

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adequate therapy. In such situations, it is thought that certain factors which are characteristic of the endotoxic form of shock are given time to develop in prolonged states of traumatic and hemorrhagic shock. An example is the hemorrhagic bowel lesion, said to be uniformly present in terminal phases of both endotoxic and hemorrhagic shock in laboratory animals, during which invasion of the systemic and portal circulation by endotoxin-producing enteric organisms occurs. This intestinal phenomenon, currently thought to be the most important cause of irreversibility in shock-like states, is apparently the result of intense peripheral vasospasm of the intestinal vessels, caused by the release of endotoxin.[9] It has been shown that pretreatment of the experimental animal with adrenergic blocking agents, such as dibenzyline and chlorpromazine, prevents or mitigates the vasospasm so that the intestinal lesion does not appear, and survival is facilitated.[10] Corticosteroids in large doses, and large doses are essential, also act as adrenergic blocking agents to prevent vasospasm and the development of the hemorrhagic bowel lesion when used as pre-treatment for the experimental animal.[10] It is now thought that the failure of earlier experiments to show a beneficial effect from cortisone administration in surgical shock, might have been due to inadequate, though physiologic, dosage.

In addition, it has been shown that sublethal endotoxic shock in the experimental animal can be greatly magnified by the use of vasospastic agents, such as norepinephrine and metaraminol, to a degree where all of the experimental animals will succumb. It is thought that potentiation is due to vasospastic effects on the intestinal vessels, producing a hemorrhagic bowel lesion which, under the conditions of the experiment, might not be expected to appear, or if present, not to be severe enough to be lethal.[10] It is possible that future investigation may show that this malign effect can be blocked by pre-treatment with the corticosteroids, or by concurrent administration of the corticosteroids in large doses.

Summary

It is reasonable to suppose then, that in clinical situations with human patients, where shock for one reason or another has been prolonged, corticosteroid administration might purchase additional time for the threatened individual, during which fundamental measures such as blood replacement, con-

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trol of hemorrhage, correction of acid-base and other deficits or imbalances, and intensive, selective, antibiotic therapy, can be pushed to completion. During the time these measures are being carried out, perhaps hampered by technical difficulties and delays, and while the patient is still in shock, the development of a hemorrhagic bowel lesion, and other as yet unevaluated phenomena, can possibly be prevented or postponed by the adrenergic blocking effects of the corticosteroids in large doses, so that irreversibility does not develop. It is also possible that, in the future, we may find pre-treatment with the corticosteroids in certain elective surgical operations which are known to be long, shocking, and extensive, of considerable value as a protection against the development of irreversible shock from the combined effects of the operative trauma and the vasospastic agents commonly used to maintain blood pressure during the procedure.

It is well to remember that, except in cases of primary adrenocortical insufficiency, corticosteroids cure nothing, correct nothing, but merely suppress and postpone. Corticosteroids, like hypothermia, while not corrective or curative, may provide a peculiar, temporary, artificial environment in which the severely damaged organism may be repaired. The ultimate success of the repair depends, however, on the extent of the damage, the availability and effectiveness of the replacements or substitutes and the skill of the reparative effort.◀

Induction of Labor in Pre-Eclamptic Patients

Neonatal death rate following delivery in pre-eclamptic mothers in the 35th week is under 5%, after the 38th week less than 4%. These findings suggest little need to delay induction in women with pre-eclampsia beyond the 36th week. Intervention in 165 pre-eclamptic women was done when the calculated risk of intrauterine death first appreciably exceeded the risk of neonatal death. Of this number, 115 infants survived, 39 died before birth, and 11 died in the neonatal period. Other methods which attempt to forestall intrauterine deaths by early intervention cause a large increase in neonatal deaths.

Carey, H. M., & Liley, A. W., *New Zeal. M.J.*, 58:460-466,1959.

Carcinoma of Pancreatico-Duodenal Region

WILLIAM C. VON DER LIETH, M.D., *Vincennes, Indiana*

▶*Prognosis of Whipple resection of the pancreas will be improved as surgeons restrict curative efforts to small lesions, regard nodal metastases and invasion of adjacent viscera and major vessels as criteria of nonresectability, and resect clinically favorable lesions without positive biopsy.*◀

When confronted during operation with an apparent carcinoma of the pancreatic or duodenal region the surgeon must first establish an accurate diagnosis and then select a suitable form of therapy. The nature of the pathologic changes present may have been suggested by his preoperative evaluation. Marked weight loss with a constant and mid progressive jaundice and epigastric pain boring through to the back may have suggested the presence of a carcinoma of the pancreas. A longer history characterized by recurrent bouts of pain may have indicated chronic or subacute pancreatitis. Finding blood on duodenal intubation or analysis of stools coupled with jaundice that temporarily lessened may have suggested an ampullary lesion.

Establishment of a firm diagnosis usually depends on operative findings. These may be confusing, since pancreatitis secondary to obstruction of part of the pancreatic duct system by an adenocarcinoma of the head of the pancreas produces a combination of pathologic changes difficult to interpret. This same combination makes a biopsy difficult to interpret, particularly by frozen section techniques. In addition, certain aspects of biopsy are dangerous, such as the difficulty of obtaining hemostasis, the hazard of precipitating acute pancreatitis, the risk of creating a persistent pancreatic fistula, and the danger of disseminating tumor cells. Although multiple needle biopsies have been advocated, this method is of value only if positive for malignancy.

Indications for Biopsy

Carcinomas arising in the peri-

ampullary tissues are usually easily biopsied from inside the duodenum, after exploratory duodenotomy. Biopsy of a regional node while dissecting to establish the extent of the tumor is occasionally safer and more satisfactory, having its greatest use in advanced malignant lesions not resectable for cure. At the completion of an otherwise futile laparotomy, it is desirable to be able to provide the patient and his family with a definite diagnosis and accurate prognosis. In this situation, even those opposed to biopsies feel that a biopsy should be done.

There are two schools of thought as regards the need for positive evidence of carcinoma before proceeding with a radical resection. One, although admitting the difficulty and risks of biopsy, feels that the high immediate mortality rate for resection makes it desirable to obtain positive biopsies before proceeding. The other maintains that pancreatic biopsies are often misleading or incorrectly interpreted and that it is best to proceed on the basis of clinical judgment. One advocate of the latter school takes multiple biopsies of regional nodes before proceeding with resection and feels that the demonstration of lymph node involvement by carcinoma is evidence of incurability rather than of need for wider *en bloc* dissection. He pays particular attention to the nodes along the hepatic artery, in the root of the small intestine, along the right gastro-epiploic artery, along the middle colic vessels, and behind the upper common and hepatic ducts. Although he advocates that every effort be made to obtain a positive tissue diagnosis in cases that are not resectable, he feels that primary intrapancreatic tumors, when resectable, should not be biopsied.

Prognosis

The operative mortality of pancreatic or duodenal resection in reports of collected series usually ranges from 20 to 30 per cent. The complication rate is high, with pancreatic fistula or leak the greatest cause of difficulty. Major gastrointestinal hemorrhage from marginal ulcers has been reported as a late sequela, probably due to diversion of the major source of alkali in the gastrointestinal tract. Resection of at least 50 per cent of the stomach is advocated to minimize this possibility. Late development of sprue and/or diabetes has also been described, this thought to be due to stricture of the pancreatic or jejunal anastomosis.

Cures are few. Ampullary and distal common duct cancers carry a relatively favorable prognosis as compared to pancreatic

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carcinomas. A review of the American literature in 1955 disclosed 36 five-year survivors following pancreatico-duodenectomy, 21 of these patients having had ampullary lesions and only 8 carcinomas of the head of the pancreas. A few additional cases have been reported since 1955. Most reported series include a significant number of advanced unfavorable tumors resected between 1940 and 1950 when a resectability rate of 1 in 3 was the general rule. The same surgeons might consider some of these lesions nonresectable today.

It seems certain that by restricting curative efforts to small lesions confined within the zone of proposed resection a reasonable operative mortality and a better survival record will be reported. Criteria of nonresectability would include distant and regional nodal metastases, invasion of adjacent viscera, and major vessel involvement. The surgeon should be willing to bear responsibility for proceeding with resection of a clinically favorable lesion without positive biopsy.◀

J. Indiana M.A., 53:454-456,1960.

Aspiration and Hypostatic Pneumonia Treated with a Rocking Bed

BURTON H. FERN, M.D., and
JOAN C. BROWN, R.N., *Stratford, Connecticut*

In an illustrative case of hypostatic pneumonia in a boy of three use of a rocking bed to activate the inert diaphragm was successful after other measures had failed, suggesting that this procedure would be a valuable adjunct particularly in those cases where cough and gag reflexes are weak.

A method for activating the inert diaphragm by gravity was first described in 1932. A year later the use of a rocking method of artificial respiration in cases of drowning was described by which mucus was readily expelled from the air passages. Others have reported the use of this rocking method for resuscitation at birth. One of these reports stated that the child's head was lowered and that the familiar thick mucus plug was expelled immediately through the nostrils. However, one investigator reported that the rocking bed was useless in the absence of an open airway.

Illustrative Case

A boy of three was admitted for domiciliary care. His mother, a diabetic, had had two other full-term pregnancies. The first child was stillborn, the second died a few days after birth. Both babies weighed well over 12 pounds at birth. A few years later the patient, weight 12 lbs., was born. He had had severe respiratory difficulty with convulsions during the neonatal period and the diagnosis "anoxic encephalopathy" had been made. During the next 3½ years convulsions occurred during three or four febrile illnesses. A month before transfer to us, the patient was admitted to another service because of fever and convulsions. The convulsions persisted and the boy lapsed into permanent coma. Extensive investigation failed to reveal any underlying etiology and he did not respond to treatment.

On admission he was comatose, exhibited decerebrate rigidity, coarse rhonchi and rales over both lungs, gag and cough reflexes weak, and the pharynx was full of mucus. For the next five months he was maintained on essential nutrients, electrolytes, sugar and water via stomach tube. The condition persisted in spite of various antibiotics, suctioning, position-changing, and some postural drainage. About every two weeks there would be an exacerbation ne-

cessitating the use of oxygen with water vapor or alevaire. After four months urinary retention and abdominal distention became a problem. At the same time pitting edema of the legs, arms, and sacral area developed. The patient was then placed prone on a rocking bed, and while it rocked, his back was pounded on lightly to loosen mucus. Pressure was exerted on his chest as the bed went into a head-down position to force pulmonary secretions towards the head. About 3 ounces of muco-purulent secretion was expelled through the mouth. Similar results were obtained when this rocking was repeated for half-hour twice daily until treatment was stopped a few days later. By then much less oral suctioning was required than previously, and breath sounds were much clearer. Four days after the rocking bed had been stopped, although postural drainage was continued, the mucus problem returned and the lungs were again congested. The patient, now supine, resumed rocking for 15 minutes twice daily. Within a few weeks the pulmonary condition had cleared, and the abdominal distention and edema had decreased considerably. After one month of rocking twice daily a chest x-ray was normal. (Two previous x-rays had been diagnosed as "pneumonitis and alveolar atelectasis.") The bi-weekly exacerbations of chronic pneumonia ceased. For the first time in six months the oxygen apparatus could be removed from the bedside.

Six weeks after this therapy was begun an episode of pneumonia developed. For the first time sputum cultures revealed a true pneumococcus pathogen. When a repeat sputum culture revealed monilia, nystatin (Mycostain) was given. Subsequent cultures were negative and the edema and distention minimal. Antibiotics were stopped two months after rocking bed therapy was instituted, and after three more months the patient was discharged to his home. His diet, anticonvulsant drugs (phenobarbital and diphenylhydantoin sodium), and rocking regimen remained the same. In 15 months at home the patient has suffered only one pulmonary infection, that when both parents had respiratory attacks. This pneumonia cleared readily. He is still comatose, lies in bed almost all the time, and has weak cough and gag reflexes.

While rocking, the patient's color remained excellent and he synchronized his respirations with the bed. The rocking bed was set so that the patient's head reached 5° above the horizontal at its lowest, 30° above at its highest, point. The rocking rate was 11 times a minute. After each rocking period the head of the bed was tied down and the bed tipped back, the head 15° below the horizontal for 30 minutes.

Many hospitals have rocking beds which are not in use, now that respiratory poliomyelitis has become rare. Since these same hospitals have many patients suffering from aspiration and hypostatic pneumonia, rocking bed therapy could easily be added to the usual treatment. This rocking might be a valuable adjunct to present day therapy, particularly for patients who have weak cough and gag reflexes. Further clinical trials are needed to fully evaluate the effect of the rocking bed on aspiration and hypostatic pneumonia.◀

Connecticut M.J., 23:393-394,1959.

Regional Chemotherapy

VALLEE L. WILLMAN, M.D., and
C. ROLLINS HANLON, M.D., *St. Louis, Missouri*

►*Isolated perfusion of a tumor-bearing area was developed in an effort to avoid exceeding the tolerable effect of anti-tumor agents on the hemopoietic system. In an illustrative case, malignant melanoma was treated by this method. The tumor disappeared and the adjacent ulcerated area healed completely.*◄

The value of alkylating agents in the management of nonresectable malignancy is well established. Rapidly proliferating tumor cells are more affected than are most normal cells, but the toxic effect on such rapidly proliferating normal cells as those of the hemopoietic system limits the dosage of these agents for systemic administration.

To increase the concentration of a cytotoxic agent at the site of the tumor without exceeding the tolerable effect on the hemopoietic system, the technique of intra-arterial injection of the agent into the regional blood supply of the tumor-bearing area was introduced. When nitrogen mustard was given intra-arterially with concomitant venous occlusion, there seemed to be an enhancement of the effect on the tumor without increase in systemic toxicity.

In an attempt to increase further concentration of the agent at the tumor site, the technique of regional isolated perfusion was developed, this employing an extracorporeal pump-oxygenator. The associated hyperoxygenation may potentiate the tumoricidal effect of cytotoxic agents, thereby adding to the value of this technique.

In an illustrative case, a malignant melanoma had previously been excised from the medial aspect of the right ankle of a woman aged 39. Two years later there was evident recrudescence of the disease. A wide excursion of the area was carried out along with an inguinal node dissection. Positive nodes were recovered. There was no local evidence of disease for seven years when induration in the primary area led to a biopsy show-

ing positive for malignant melanoma. An attempt at local excision was abandoned when exploration revealed involvement of the ankle joint by tumor. Employing spinal anesthesia, the right femoral artery and vein were exposed through an inguinal incision. Small plastic catheters were introduced distally and a tourniquet applied about the groin. A Steinman pin in the iliac crest facilitated retention of the tourniquet in a high position. The extremity was incorporated in an extracorporeal circuit by aspirating blood from the femoral vein, passing it through a Kay-Cross disk oxygenator and pumping back into the femoral artery. Rate was regulated by monitoring the pressure at the femoral artery. During a perfusion of 30 minutes, 20 mg. (0.4 mg./kg.) of nitrogen mustard was introduced into the arterial line. The catheters were then removed, the vessels reconstituted and the incision closed.

The leg became warm during the next three days, but caused little discomfort. There was transitory mild depression of the white blood count. The patient was able to perform household duties by the fifth day. During the next six weeks, there was gradual diminution in the size of the tumor and of the ulcerated area of the ankle. At this time it was decided to repeat the perfusion using the same technique and dosage since a biopsy was not recognizable as melanoma. The patient again tolerated the procedure well and left the hospital on the third postoperative day. During the next two months, the ulcer healed completely and the area became quite supple.◀

Missouri Med., 56:1242-1243,1959.

Gonorrhea: Increasing Frequency of Recurrence After Streptomycin Treatment

The general impression is that increasing incidence of recurrence is due to the development of strains of gonococci resistant to penicillin. An injection of 600,000 units of procaine penicillin is standard for men, and of 255 male patients treated at this dosage, only 5 had recurrences and 4 reinfections. There is no indication for changing from penicillin to streptomycin as the main agent in the treatment of gonorrhea, since use of the latter has been followed by rapidly increasing frequency of recurrence. Use of the combination of the 2 drugs is not advised.

Gjessing, H. C., *Tidsskr. norske laegefor.*, 79: 829-831,1959.

Severe Allergic Reactions to Insect Stings

HARRY LOUIS MUELLER, M.D., *Boston, Massachusetts*

▶*Severe systemic reactions to insect bites occur quite commonly, symptoms of which cannot be relieved in time by specific sensitivity tests and treatment. In these patients, treatment should be given with a mixed whole-insect extract started with the dilution giving the initial positive test.*◀

Study of 120 cases of insect bite indicates that severe reactions occur rather commonly. It is possible that unrecognized cases account for some of the sudden deaths attributed to heart failure and heat prostration in the insect seasons. In one case, a telephone operator answered her light to hear a faint voice ask for a doctor immediately. The doctor found an unconscious woman beside the telephone and the word "stung" written on a telephone pad. Epinephrine was given, and the woman recovered. She had been stung by an unidentified insect, probably a wasp.

Principles of Treatment

Originally, it was believed that specific treatment should be given for the insect causing the sting reaction, but this has been found to be of little value. In most cases the sting causing the severe reaction occurs before hypersensitivity is suspected. To learn if there is specific and cross-sensitivity in these patients and to determine a starting point for treatment, serial intracutaneous tests with whole-insect extracts of wasp, hornet, yellow jacket, and mixed honeybee and bumblebee are done on all patients. These tests have shown that desensitization doses of whole-insect extract in 1:100 dilution apparently protect, in most cases, against the injection of undiluted venom by the stinging insect. On the average, the more severe the reaction, the shorter this interval.

Present Study

Of the 84 patients in this study, 63 (75%) had a family history of allergy, and 28 of these had a personal history of other allergy as well. Six re-

ported severe general or shock reactions to insect stings in a total of eight close relatives. Patients with only local reaction to stings were not included, all 84 patients studied having systemic reactions to stings of bees and wasps.

Treatment was started with 0.05 ml. of the dilution selected according to the patient's "initial positive test." This was followed by weekly incremental doses until a dose of 0.2 to 0.3 ml. of 1:100 dilution was reached or until a local reaction larger than a silver dollar was seen twice with the same dose. The only systemic symptoms resulting were slight, generalized itching and malaise within 20 minutes in two patients.

All patients, when started on treatment, were instructed to carry with them at all times a sublingual tablet of isoproterenol and, if stung before maintenance dosage was reached, to take the tablet immediately and seek medical care. After maintenance dosage was reached, they were instructed not to take the medication if stung unless systemic symptoms appeared. Once they had been stung without reaction, they could discard the medication.

Early patients were built up to a dose of 1:10 dilution, if tolerated, although experience indicated that a dose of 0.2 to 0.3 ml. of 1:100 dilution was protective. All patients were given their maintenance dose every four weeks in the insect seasons, and every six weeks through the winter, for a period of three years. It may be possible, after the first year of treatment, to maintain patients on a booster dose four times a year. Identification of the insect causing the sting reaction was unreliable unless the insect was captured and identified by an expert.

Of the 76 patients so treated, 40% have had subsequent stings. With one exception, all patients who have been stung while on a maintenance dose of 0.15 ml. or greater of a 1:100 dilution of mixed extract, or who have been stung after completing three years of treatment have had no resulting systemic symptoms.

Summary

Intracutaneous testing reveals that extreme sensitivity may occur in these patients, that multiple sensitivity is usual, and that these tests can be used as a guide for starting doses in treatment. In all patients who have had a systemic reaction to a sting by any one of these insects, treatment with a mixed whole-insect extract of bee, wasp, hornet and yellow jacket is advised, starting with the dilution that gives the "initial positive test," and in-

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1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952

creasing gradually to a maintenance dose of 0.2 to 0.3 ml. of 1:100 dilution. If testing is not performed, it is recommended that patients be started at 0.05 ml. of a dilution of 1:100,000,000.◀

New England J. Med., 261:374-377, 1959.

Treatment of Benign Tumors of the Uterus

The majority of women with myomas of the uterus have no symptoms, perhaps only one-fourth requiring any treatment. Of 215 patients having myomas, age range was 20 to 70, the largest number in the 40 to 45 age group. Of the 215, 120 have been followed for one to 10 years and 95 have not returned for follow-up. Of the 120, 24 had currettage of the uterus and biopsy of the cervix (all benign). Testosterone was used in two patients to decrease menorrhagia. Pregnancy occurred in 13, 12 of whom had normal vaginal delivery. Menopause in 10 removed the problem of bleeding, thereby decreasing the size of the tumor. Subsequent curettage was advised in 10 because of irregular bleeding, hysterectomy in another 10 because of increased bleeding and increased size of the uterus. In 16 hysterectomy was considered by patient and gynecologist.

Among 645 cases of myomas of the uterus, observation was advised in 215, 24 had diagnostic curettage of endometrium and biopsy of cervix, and 120 were followed from one to 10 years. Subsequently 10 patients have been advised to have curettage, and in 26 the size and symptoms have so progressed that hysterectomy is to be considered.

Hysterectomy was performed in 263 cases for strict indications from the myoma itself. Myomectomy in 31 of 200 cases with conservative operation for endometriosis was done during pregnancy in six cases. Of these six abortion in progress was completed in one and at Cesarean section in four. Malignant lesions occurred in 3.4% of excised specimens in this series. Incidental sarcoma occurred in seven patients, all of whom have remained cured. Other early malignant lesions were found incidentally in eight cases.

Adenomyosis and stromal myosis require microscopic study. Rarely, they may be treated by conservative operations.

Gray, L. A., *J. Kentucky M.A.*, 57:1052-1058, 1959.

Management in Cases of Pulseless Extremities

RAY W. GIFFORD, JR., M.D., *Rochester, Minnesota*

▶*Treatment of occlusive arterial disease is palliative and often ineffective because it does not eliminate the cause. Anticoagulants should be given at once unless surgery is contemplated. Embolectomy should be reserved for those in good general health, after one to four hours of medical treatment has failed.*◀

Sudden arterial occlusion may result from either embolism or thrombosis. Differentiation is not always easy and usually unnecessary for emergency treatment. Elevation of the extremity and the direct application of heat may do irreparable harm. An environmental temperature of 85 to 90° F. encourages reflex vasodilation. The extremity should be loosely wrapped in a protective dressing of cotton and roller bandage (to shield it from trauma and to conserve body heat) and placed in a slightly dependent position. Opiates are used to control pain. Anticoagulants should be given at once and continued while in the hospital unless surgical intervention is contemplated. Intravenous administration of 50 mg. undiluted heparin every four hours is continued until prothrombin activity can be lessened by Dicumarol or warfarin (Coumadin) and maintained, adjusting the dose to keep the Quick one-stage prothrombin time at 2 or 2½ times normal.

If embolectomy is contemplated, warfarin should be omitted and heparin alone used. Warfarin can be given parenterally. Ethyl alcohol is a useful dilator, anodyne and sedative. Whiskey, 1 or 2 ounces every three hours during the acute stage, can be given intravenously in a 5% solution. Other helpful arterial dilating drugs include papaverine HCl and tolazoline (Priscoline) HCl. If possible one of these is injected into the brachial or femoral artery of the involved extremity. If the occlusion is more proximal so that the brachial or femoral artery is not palpable,

either may be administered intravenously. The usual dose of papaverine is 60 mg., of tolazoline 25 or 50 mg. Injections can be repeated at intervals of four hours if satisfactory vasodilation is being achieved. If one of these drugs fails, the other should be tried.

Embolectomy has a better chance if undertaken within six to 12 hours of onset of symptoms, and the embolus should be proximal to the bifurcation of the popliteal artery because of difficulties in operating on smaller arteries. Embolectomy is reserved for those in good general condition, those whose occlusion is less than 12 hours old, and those for whom one to four hours of medical treatment have failed to give benefit. Long-term therapy with anticoagulants is used after the acute episode, with laboratory determinations of prothrombin time.

The treatment of occlusive arterial disease is palliative and often ineffective because it does not get at the basic cause. The medical treatment of ischemic lesions or the surgical by-passing of occluded segments of arteries does not prevent progression of atherosclerosis in other sites. New surgical techniques can at best only deal with isolated complications of the general disease.◀

Missouri Med., 56:1020-1025,1959.

Prolonged Use of Tranquilizers

FRANK ORLAND, M.D., *Camden, New Jersey*

▶*Functional components in the etiology of psychotic symptoms and the temporary nature of help given by tranquilizers should be emphasized to the patient. Psychotherapy is usually required, and constant re-evaluation of the manner in which patients handle reality situations is indicated if they are given for long periods.*◀

Use of tranquilizers in psychiatric illness may be helpful in temporary emotional disturbance, in controlling the hyperactivity of a psychotic until hospitalization, relieving a mild depressive state, maintaining a mildly disturbed senile patient, reducing transient mild anxiety states, controlling acute alcoholic states, stabilizing chronic alcoholics, and in controlling withdrawal symptoms of drug addiction. Chemotherapy as well as the shock therapies do not change the basic personality structure. Although tranquilizers provide temporary relief at best, psychotherapy is usually required.

These agents may decrease tensions to such a degree that the patient becomes oblivious to the realities of life. A certain minimum level of anxiety is a prerequisite for psychobiologic survival since it affords an awareness of existing problems and furnishes motivation to seek their solution. If an oversuppression of anxiety occurs, it may eventually lead to graver symptoms than those of the original condition. The patient no longer has any worries, no longer plans logically, tends to make impulsive decisions, may manifest defective reasoning and judgment, and as a result may find himself in real difficulties. These create further problems with their own anxieties and tensions, necessitating increasing dosages of the tranquilizer for masking. In this way a vicious cycle is established in which the patient continues to decompensate clinically.

Prolonged administration of tranquilizers tends to fortify the patient's misconceptions that the causative factors are organic rather than functional. If the medicament fails to alleviate the

somatic symptoms both patient and physician become discouraged. It is therefore advisable to emphasize the functional components in the etiology of the symptoms and the temporary nature of the help given by tranquilizers. Prolonged administration may also foster undue dependency on both the medicaments and the physician. This attitude diverts the patient's efforts from real problems in his life situation and from the emotional conflicts within himself having created the symptoms. Increased feelings of inadequacy and helplessness may thereby develop, resulting in increased need for medicament and in turn deeper dependency.

Tranquilizers may restore a personality to its previous functioning level, but prolonged or intensive use should be undertaken with caution. Constant re-evaluation of the patient's psychiatric symptoms and his handling of reality situations is indicated whenever tranquilizer administration is over an extended period of time.◀

J.A.M.A., 171:633-636,1959.

Effective Reduction of Blood Pressure Without Ganglionic Blockade

DAVID W. RICHARDSON, M.D., *Richmond, Virginia*

Guanethidine maintained near normal standing blood pressures in 18 severely hypertensive patients, but normal supine pressures could not be attained without causing symptomatic orthostatic hypotension. An initial dose of 200 mg., reduced to 100 mg. daily, produced results in 48 to 72 hours.

Chemotherapy of severe hypertension is inadequate. Reserpine and hydralazine effect only moderate reduction in blood pressure. Ganglionic blocking agents can lower pressure markedly but at the cost of side effects intolerable to most patients. Chlorothiazide seems effective in mild hypertension but long-term results are not yet available. In severe hypertension great need exists for a lowering agent without serious side effects.

Guanethidine (Guidine), a hypotensive agent novel in its long duration of action and lack of ganglionic blocking effect, was tried in 18 hospitalized men, each having diastolic pressures averaging 110 or more over a control period of three days. Six of these patients had control diastolic pressures averaging more than 140, nine more than 130, and 12 more than 120. Six had hemorrhages, exudates or edema of the optic fundi, 10 blood urea nitrogen above 25 mg.% in the control period, and six had previously failed to respond to ganglionic blocking drugs and chlorothiazide. One had primary renal amyloidosis proved by biopsy. In the remainder the cause of the hypertension was undetermined, despite phentolamine methanesulfonate (Regitine) tests and intravenous pyelograms. Blood pressure (supine and standing) was recorded three times daily, blood urea nitrogen, serum bilirubin, electrolytes, blood hemoglobin concentration, white cell count, platelet count before and at weekly intervals during therapy with guanethidine. Urine sodium, po-

tassium and chloride excretion was measured daily during the first week of treatment.

In most of the patients, standing blood pressure could be maintained at near normal levels. In no case could supine pressures be lowered to normal without causing symptomatic orthostatic hypotension. In all cases moderate reduction in supine pressures were recorded when standing pressures were lowest. In 14, standing pressures were reduced much more than supine, and in the remaining 4 supine and standing pressures were reduced equally. Little or no narrowing of supine pulse pressure occurred.

Initial doses of 200 mg., reduced to 100 mg. on the second day, produced maximum decreases in blood pressure within 72 hours and often within 48. In a few given 100 mg. daily lowest levels were reached in about a week, remaining there for three to four days after the drug was stopped before returning to the usual level in seven to 21 days.

The drug caused marked orthostatic hypotension in doses to reduce supine pressures to normal in 14 of the 18 patients. Dizziness occurred in all 14, fainting in six, and confusion in four. In all of these cases, resumption of the supine posture relieved all symptoms within a few moments and restored blood pressure to or above normal as soon as it could be measured.

Diarrhea in six patients coincided with maximum reduction and readily responded to small doses of paregoric. Nausea in four patients, with vomiting in one, also occurred at the period of maximum reduction. No other toxic effects were noted. Notably absent were the constipation, paresis of visual accommodation, and dry mouth of the ganglion blocking drugs.

No evidence of blood or liver toxicity was shown by weekly measurement of hemoglobin, hematocrit, white cell count, platelet count, serum bilirubin or serum glutamic-oxaloacetic transaminase activity.◀

Virginia M. Month., 86:377-381,1959.

Etiology of Peptic Ulcer

S. ARTHUR LOCALIO, M.D., *New York, New York*

▶*The genesis, propagation and chronicity of peptic ulcer have been attributed to erosion, tissue resistance, malnutrition, temperament and psychologic constitution of the patient, systemic and constitutional factors, and numerous other circumstances. Erosion, tissue resistance and systemic factors are important.*◀

Three factors appear to remain significant, probably in the genesis, and certainly in the propagation and chronicity, of peptic ulcer:

1. The eroding factor.

2. The factor of tissue resistance, applicable to all ulcers in animal or man.

3. The systemic, constitutional and neurogenic factor (applicable principally to man).

The mechanism of erosion resides in a combination of acid and pepsin. Acid-pepsin is derived from the parietal cells, these being sparsely distributed in the antrum, abundant in the fundus, and most numerous in the pars media. These cells react to stimuli of cerebral origin mediated by the vagi (as indicated), to hormonal stimuli originating in the antrum, and also to hormonal stimuli originating in the small intestine. Locally these cells are stimulated by the presence of material within the stomach, chemically by histamine, caffeine, nicotine; or any stimulating mechanism *via* whatever pathway.

Frequent sites of ulcer formation are along the lesser curvature and in the duodenum at the point of contact of the postpyloric jet. Living tissue exposed to normal concentration of acid-pepsin resists digestion. This capacity is inherent within the intracellular enzyme systems and ceases with death of the cell.

The high incidence of ulcer in polycythemia has been attributed to local ischemia secondary to thrombosis of small vessels of the stomach. There is evidence of a relatively poor vascularization of the lesser curvature and the first portion of the duodenum. Such factors as local allergy, decrease in the antienzyme content

of cells, general debility of the cells as a result of anemia, malnutrition or specific deficiencies, are difficult to equate. Living tissue can protect itself against digestion by the usual, but not the unusual concentrations of gastric juice. Different tissues have greater or lesser resistance to the same eroding factor.

Systemic and constitutional factors in the genesis of ulcer are elusive, yet responsible for the many exceptions to the ulcer diathesis.

Much atttention has been devoted to temperament and psychologic constitution of the ulcer patient, this concept having some merit. Evidence for the bearing of malnutrition is afforded by the incidence of ulcer in India where the ill-fed southern populace is prone to the disease, while the better nourished northern populace is exempt. In the south of India the disease is common among tapioca-fed coolies, rare among shore dwellers who supplement their diet with fish.◀

Missouri Med., 56:1359-1360,1959.

Telling the Cancer Patient

Most cancer patients have never known of their complaint and lived fairly comfortably until finally stricken. A few, however, have known they had cancer, often by badgering a specialist or from a well-meaning house-surgeon or nurse. No doubt they received the news with courage, but no one receiving his death knell can be the same person again. There has always been a sadness, joylessness, and hopelessness left. Often a neurosis develops, and a trifling complaint means their "cancer" is returning.

In one case, a woman had an advanced carcinoma of the cervix and should not be alive today. She heard her death warrant in hospital and on leaving proceeded to spend a small inheritance on her friends. But death did not come as she thought, and that is four years ago. Having spent her all on deathbed presents she is now compelled to work full-time, but is enjoying it and is very well.

Doctors should never be judges or gain self-importance by speaking precipitately. The family doctor, the one who really knows his patient, should be the one to make the final decision on whether to tell the patient or not since his decision would be wisest and most humane.

Swinburne-Jones, H., *Brit. M.J.*, 1:1352,1959.

Contrast Examination of Lumbar Interspinous Ligaments

RAYMOND KOHLER, M.D., *Chicago, Illinois*

►*Bilateral injections of a 30% contrast medium were used to find ligamentous defects in 100 patients with low backache or sciatica. Roentgenologic findings corresponded well with those obtained at operation in 55 patients, most of whom had prolapsed disc. Medium must be deposited close to ligamentous wall.*◄

Contrast examination was successfully applied in the demonstration of ligamentous defects in 100 consecutive cases of low backache or sciatica. With this method the radiopaque substance was injected bilaterally along the normally impermeable ligamentous wall in the midline. Anteroposterior views of the area then made it possible to demonstrate:

1. The contour of the ligament and its transverse dimension.
2. The presence of ligamentous defects as evidenced by the penetration of contrast medium into the ligament.

The first step was to place the patient in the lateral position on the radiographic table with the lumbar spine flexed. After subcutaneous infiltration of 1% xylocaine in the midline over the L-5—S-1 interspinous space, 5 to 7 ml. of the anesthetic were injected through a No. 12 needle, introduced full length at right angles to the skin at a point 0.5 to 1 cm. lateral to the midline in the sagittal plane along the interspinous ligament. The same injection was made on the opposite side. Ten to 15 minutes later, bilateral injections of 4 to 5 ml. of a 30% contrast medium were made in the same way as close to the ligamentous wall as possible. The anteroposterior film exposures were made with the patient in the supine position and the lordosis reduced as much as possible. Tomography (2 to 5 cm. sections) was also performed in the same position in a number of instances.

Normal cases showed a contrast-free zone between the spinous processes, 3 to 10 mm. wide, usually slightly spindle-shaped,

but in pathologic cases the contours outlined by the contrast medium were often irregular or ill-defined. Blotched or streaked penetration of the medium into the ligamentous area probably corresponded to degenerative changes in the ligament. Occasionally a unilateral, rounded bulging of the contrast material toward or past the midline was observed without effecting contact between the two deposits; this meant that the defect was confined to one half of the ligament. Total rupture of the ligament usually occurred near the upper spinous margin. A homogeneous accumulation of contrast medium then occupied a variable portion of the interspinous space, disclosing the communication between the deposits on the right and left sides. Of the cases examined, by this method, 55 were operated on, principally for prolapsed disc. In these cases the roentgenologic findings corresponded well with those obtained at operation, provided the contrast medium had been correctly deposited close to the ligamentous wall.◄

Acta radiol., 52:21,1959.

Anticoagulation Therapy of Some Thromboembolic Disorders

Of 132 patients treated with anticoagulants, 62 had myocardial infarction, 42 thrombophlebitis, and 33 thromboembolic features in various locations. Beneficial effects were marked in 72.2% of the patients and considerable in 8%. Thromboembolic complications occurred in the course of treatment in 2.9%, hemorrhagic complications in 2.1%, and 5.1% of the patients died. Results were most favorable in treatment of deep thrombophlebitis and in the prevention of pulmonary infarction. There was a favorable influence in cases of myocardial infarction, with decrease in the percentage of deaths, prevention of extracardiac thromboembolic complications, and notable reduction in the evolution of chronic obliterative arterial disease. Making a careful clinical examination to be sure that the patient does not have a hemorrhagic diathesis or contraindicating disorder before administering anticoagulants greatly diminishes risk of hemorrhage.

Crolle, G., et al., *Minerva med.*, 50:324-333, 1959.

Iproniazid in Depressive Syndrome

Of a series of patients with "atypical" depressions treated with iproniazid and considered susceptible to placebo suggestion, 28 were subsequently studied in a double-blind trial in which both iproniazid and a placebo (calcium lactate) were employed. The medication and the placebo were given at alternate periods of four weeks. Results of this trial showed that six of these 28 patients experienced no, three slight, and 19 marked improvement during iproniazid therapy, while 20 experienced no, seven slight and one marked improvement while receiving placebos.

Although iproniazid can produce serious toxic manifestations, its use in selected cases is justified. Of 1,000 patients treated with iproniazid over the past two years, only two developed jaundice (non-fatal in both instances). Risk of hepatic involvement may be further reduced with use of the newer amine oxidase inhibitors which are proving to be therapeutically as effective as iproniazid and less hepatotoxic.

West, E. D., & Daily, P. J., *Brit. M.J.*, 2:433, 1959.

Gouty Arthritis in Filipinos

The charts of all men with gout were coded and examined. Race and place of birth were recorded in the charts by the admitting clerks. Cases were accepted if there was a history of sudden attacks of acute arthritis involving one or two joints and a current hyperuricemia (3 cases), or an observed acute arthritis responding to colchicine with (32 cases) or without (6 cases) demonstrated hyperuricemia, and were recorded only once regardless of the number of admissions. Two cases of gouty arthritis secondary to polycythemia vera were excluded.

Incidence of gouty arthritis in adult males admitted to a large city hospital was found to be 2.5% in Filipinos and 0.13% in others. Study of Filipino patients revealed no unusual features. All had had severe pain, swelling and redness of the first metatarso-phalangeal joints, all had responded to colchicine, all but 1 had hyperuricemia (on zoxazolamine when seen). None of the men knew each other, no 2 were related, none had a family history of any sort of arthritis. All had been working in the United States or in the merchant marine for long periods, average 36 years.

Possible explanations are:

1. The mixed races of the Philippines have a much higher incidence of the disease than has heretofore been recognized.

2. The substantial environmental change through which our patients have gone has modified the manifestations of the disorder.

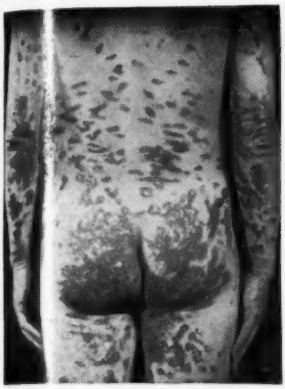
Since it has been widely noted that the incidence of gout varies directly with the interest with which it is sought, the former explanation is preferred.

Decker, J. L. & Lane, J. J., Jr., *New England J. Med.*, 265:805-806,1959.

Gastric Ulcer: Familial Occurrence

In a study of a large number of cases, the frequency of peptic ulcer is found to be 2 to 2½ times as high among relatives of persons with the disease as in the general population. Members of families of gastric ulcer patients tend to gastric ulcer, members of families of duodenal ulcer patients to duodenal ulcer. Genetically, gastric and duodenal ulcer should be considered independently of each other. In one family gastric ulcer was established in a father and his 4 sons, living in environments and under nutritional conditions no different from those of neighbors not having peptic ulcer. Evidence suggests that the genes concerned are related to ABO blood types.

Nordoy, A., *Tidsskr. norske laegefor.*, 79:951-953,1959.



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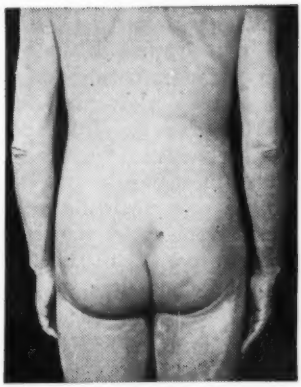

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Shock of cardiac origin differs from that of other origin in that the venous return flow to the heart is adequate, but the heart is unable to maintain an adequate cardiac output. The blood pressure is low, there is peripheral vasoconstriction, a prolonged circulation time, elevated venous pressure, and normal or increased blood volume. Clinically, it is characterized by evidences of specific cardiac disease and an elevated venous pressure in the presence of shock. Pulmonary congestion is common.

Although no spectacular advances have been made toward successful treatment, intelligent care can save some patients who might otherwise die from this condition. Nature of the cardiac disorder and whether the shock is of cardiac origin must first be established. A helpful finding is high venous pressure, this gauged most easily with the patient in a semi-sitting position. A clearly elevated venous pressure in a patient in shock is almost pathognomonic of cardiogenic shock when:

1. There is no superior caval obstruction.

2. Pulmonary congestion and edema are present.

3. There are no other reasons for shock, i.e., no evidence of infection or acute adrenal insufficiency.

Management is started with bed rest, oxygen (by mask, if tolerated), reassurance, and small intravenous doses of narcotics as needed. If blood pressure remains low after these measures, the use of a digitalis glycoside should be considered. Encouraging results have been obtained with a rapidly acting glycoside. Half the usual dose of this agent has a therapeutic effect and more could produce toxic effects, so that it should be given in small repeated doses. Adrenal cortical hormones are probably of no value. There is no basis for the use of transfusions. When arrhythmia or acute cardiac tamponade is responsible, specific therapy is possible.

Gilbert, R. P., *Illinois M.J.*, 116:98-91,1959.

Lethal Polyarteritis in Rheumatoid Arthritis

A man of 49 with severe rheumatoid arthritis for many years had been treated with large doses of cortisone for 2½ years, this gradually being discontinued because it was of little benefit. A syndrome consisting of fever, loss of weight, pleurisy, pericarditis, renal disease, retinopathy, and extensive necroses in skin and subcutis developed. Repeated examinations for L. E. factor in blood and pleural exudate were all negative. Necrotizing

angiitis was established by biopsy of skin and muscles. The clinical and hematologic findings showed features in common with polyarteritis nodosa and systemic lupus erythematosus. There was steady decline to death after 4½ months. At autopsy, vascular lesions were found in skin, muscle and kidney, diffuse thickening of the base membrane in glomeruli, and degenerative changes in the tubules.

Holten, C., et al., *Ugesk. laeger*, 121:944-947, 1959.

Shellfish Poisoning

All shellfish poisoning on the east coast occurs in two districts – the estuary of the St. Lawrence (north and south shores) and the lower Bay of Fundy. Three types of areas in each district are those where shellfish sometimes contain poison (as shown from study of shellfish extracts), those where illnesses have occurred following consumption of local shellfish, and those where there have been deaths from this cause. Some reports of shellfish poisoning in these areas date back to the period 1800-1810. The latest occurrence in the Fundy area was in 1958, when there was one case of illness from this cause.

Ind 1957, over one weekend, 27 persons from New Brunswick were sick for periods ranging from a few hours to three weeks. In 1945, a smaller group of persons from this area ate the same varieties of shellfish from the same places at about the same time of year and this brought on an epidemic.

A search to discover the cause of such illnesses revealed that a one-cell flagellated plant found in the plankton as summer water temperatures approached peak disappeared soon after. The time of occurrence of this plant coincided with the time when poison was present in the shellfish. A regular sampling of shellfish maintained at this key station closed down commercial harvesting of clams when poison appeared in them, and kept the clam-producing areas under quarantine until the danger passed. Clams were the only commercially important species of shellfish affected. The clam industry therefore prospered as all clam consumers were protected or at least warned of the risks of poisoning. No picnickers died, fortunately, but many became ill enough to be very interesting cases.

In 1958 and 1959, warning signs were put out as before and newspapers and radio and television stations issued warnings as soon as the danger appeared imminent. All these kinds of warning must continue.

Medcof, J. C., *Canad. M.A.J.*, 82:87-90,1960.

Effect of Nicotinic Acid on Experimental Atheromatosis in Rabbits

Of 33 male albino rabbits of similar age and weight, nine received only a control diet of rabbit chow, eight received the same diet plus 0.6 gm. of cholesterol daily, seven received the control diet plus cholesterol and 0.5 gm. of nicotinic acid daily, and nine received the control diet plus 0.5 gm. of nicotinic acid daily. Body weight and serum cholesterol were determined monthly. At the end of three months the animals were sacrificed and the heart, aorta, liver and kidneys were studied grossly and histologically.

Neither atheromatous vascular lesions nor increase of serum cholesterol were noted in the control groups. Hypercholesteremia, present in both cholesterol-fed groups, was less marked in the group also having received large doses of nicotinic acid. In this latter group the degree of aortic atheromatosis was less than in the group receiving cholesterol without nicotinic acid. Administration of large doses of nicotinic acid orally to animals fed the control diet did not produce detectable toxic effects upon the hepatic or renal parenchyma, nor did it cause any significant change in the concentration of serum cholesterol. In the cholesterol-fed rabbits, large doses of nicotinic acid did not prevent the accumulation of lipids in the liver parenchyma. These findings justify the conclusion that large oral doses of nicotinic acid reduce hypercholesteremia and the aortic atheromatosis produced in rabbits by the administration of cholesterol.

Cava, E. E., et al., *Proc. Staff Meet. Mayo Clin.*, 34:502-509,1959.

Carcinogenic Effect of Smoked Foods

Stomach cancer is rather frequent in Iceland, where smoked meats and fish constitute an important part of the diet. This problem was first investigated by feeding experiments on rats, most of which fed exclusively on smoked meat died within so short a time that later no more than 20 gm. of smoked meat was given a rat daily along with a standard diet. Two of four rats originally fed the smoked meat died after 18 months, one of liver cancer with metastases, the other of cancer of the lung. Considerable quantities of the highly carcinogenic benzpyrene were detected in the smoked food. Foods smoked only briefly are probably not dangerous, but those smoked for weeks or months (as is frequently the case with lamb and mutton in Iceland) may contain carcinogenic substances in sufficient quantities to make them dangerous.

Dungal, N., *Krebsarzt*, 14:22-24,1959.

Fatigue Fracture of the Pelvis and Lower Extremity

Fatigue or march fracture is rare, occurring mostly in recruits subjected to rigorous physical training. The first symptom is aching in the involved bone, this being constant and dull and promptly relieved by non-weight bearing. The aching pain is often experienced in the perineal region, and aggravated by forceful abduction and adduction of the thighs. Compression of the lateral and plantar aspect of the heel often produced pain in fatigue fracture of the os calcis. Pain at the fracture site reproduced by percussion or pressure of the involved parts is an interesting feature. Laboratory examinations including serum calcium, phosphorus and alkaline phosphatase, generally give normal results.

Ten days of bed rest usually relieve pain. Gradual walking is then resumed as regulated by pain. Some work is usually possible in a month and return to training in six to eight weeks. No plaster cast is required in uncomplicated cases. The fact that these fractures (particularly those of the tibia) occur mostly in midwinter, when heavy clothing and boots were worn, seems to support the opinion of others that a distracting force from repeated overstress may be an etiologic factor.

Wang, C. C., et al., *New England J. Med.*, 260:958-952,1959.

Pilonidal Sinus of the Axilla: Report of a Case

Practically all pilonidal sinuses develop in the region of the sacrum. In one case a woman of 56 presented a painful area in the left axilla for the past eight weeks, initially red and hard, but improving gradually without treatment. A small indurated area was found in a crease just behind the anterior axillary fold, 2.5 cm. in diameter, a few hairs protruding from a small sinus in its middle. The site supports the general hypothesis as to the influence of suction. A hair or sharp body could penetrate the normal skin or a hair follicle or sweat gland may be the point of entrance of material from without. In this case the talc granuloma at the fundus of the sinus is further indication of the mode of development and external origin of material in the sinus.

King, E. S. J., *Australian & New Zealand J. Surg.*, 28:196-201,1959.

Pheochromocytoma

Of 7 patients with this form of tumor, location was in the right adrenal in one. The hilus of the right kidney, removed at a second operation 3 years later, showed no evident relationship with the other tumor. Another patient died 24 hours after removal of a pheochromocytoma of the right adrenal, autopsy revealing a tumor of the same nature in the left adrenal and an anaplastic thyroid carcinoma with pulmonary metastases. Two other patients had pheochromocytoma in the thorax. In the fifth patient tumor was below the right renal artery. Communication between each of these tumors and a sympathetic nerve or trunk was established. One patient, vomiting and in shock on admission, reported previous episodes of dizziness and vague abdominal pain. Death followed 36 hours of shock and terminal fever. Massive hemorrhage in a pheochromocytoma of the right adrenal was established at autopsy. An intravenous injection of 5 mg. of phentolamine was used as a screening test and caused marked fall of blood pressure in all 5 patients, all 5 being checked by the benzodioxane test. If both tests were positive they were further checked by measuring excretion of catechols.

De Graeff, J., et al., *Acta med. scandinav.*, 164: 419-430,1959.

Familial Incidence of Breast Cancer

Grandmothers, mothers, aunts and sisters of women with breast cancer have had breast cancer with a frequency which is significantly greater than that of women in a similar age range either in the general population or in two sets of selected control samples. This excess cannot be entirely of environmental origin, since it is found almost to the same degree in both paternal and maternal grandmothers and aunts.

It cannot be attributed to a biased selection or to chance distribution of the trait through the population, since the excess is significantly greater than can be accounted for by either of these factors. Better recall by women with breast cancer, whose relatives are similarly affected, has no bearing on this excess, since the entire family of both control and breast-cancer samples was thoroughly investigated. The ratio of observed-to-expected number of breast cancers is higher in unmarried than in married aunts and sisters. The fact that the presumably genetic factor responsible for this excess of breast cancer is enhanced to the greater degree in childless women shows the interaction of genetic and extrinsic factors.

Macklin, M. T., *J. Nat. Cancer Inst.*, 22:927-951,1959.

Treatment of Cervical Fractures of the Femur

Adequate reduction is the first essential. The internal weight-bearing system in the proximal end of the femur being compressive in nature, the main load direction runs in a steep line within the head and neck. Internal fixation should respect this system if both weight-bearing and the maintenance of reduction are to be achieved.

Of 137 patients having been treated by means of the low-angle Kuntscher nail over the past 5 years, the 36 having sustained incomplete, mid-cervical, basal or intertrochanteric fractures and having survived a period of three months all had good union without deformity. Of the 56 having sustained fully displaced subcapital injuries and having been followed up for at least 12 months, 75% had united well. Further examination showed that union had followed in almost every case in which good reduction had been achieved, while poor reduction had invariably resulted in ultimate failure. Low-angle fixation in the presence of unsatisfactory reposition of the fragments with early weight-bearing is a worthless procedure.

Most patients are over 70, so that they are predisposed to complications after being immobilized for 6 or 12 weeks. The neck of the femur is angulated in relation to the shaft, and as in the angulated fracture of the tibia weight-bearing leads to non-union. By a suitable pinning technique varus can be reduced or eliminated and the intact calcar femorale of the shaft brought medial to the point of weight-bearing on the femoral head. Weight-bearing now results in impaction which is desirable and most important in the first 3 weeks following fracture.

Advocated technique is to reduce into a valgus position if possible and impact heavily before inserting the guide wire when the femur is exposed. A low nail resting on the calcar femorale is inserted, but if it has not been possible to reduce the fracture so that the calcar femorale of the shaft lies medial to the point of weight-bearing of the head, a subtrochanteric angulation osteotomy is done after a wide-angle Jewett nail plate has been inserted low in the neck. After operation the patient is made ambulatory as soon as possible and is taught to stand on a wide base holding on to the end of the bed and swaying from side to side. In a day or two walking with full weight-bearing is encouraged, at first with a wide base.

Early ambulation with a low-angle nail gives better results

than treatment where weight-bearing is delayed. There should be more frequent use of the angulation osteotomy for certain types of fracture.

Garden, R. S., & Mitchell, W. R. D., *Proc. Roy. Soc. Med.*, 52:866,1959.

Acute Osteomyelitis: Treatment

Among 32 patients with acute osteomyelitis and treated with 200,000 to a million units or more of penicillin (according to age), the temperature usually was normal after a week, the general symptoms disappeared, and the local symptoms rapidly regressed. Treatment was continued beyond the time the clinical symptoms lasted, usually for 3 weeks. No improvement followed operative intervention in 8 cases, while in 27 the sedimentation rate was normal before discharge and in 5 shortly after discharge. Follow-up showed 31 patients to be clinically well. Although suppuration developed in the affected bone of one patient at long intervals, it lasted a few days only. On discharge, x-ray was negative in 11 patients admitted an average of 5 days after onset. In 13 admitted after an average of 15 days, changes in the bone were more or less plainly visible. The 8 patients treated operatively were admitted after an average of 40 days after onset. With early and properly applied treatment with antibiotics, close to 100% of these patients will recover full use of the affected part.

Stray, K., *Tidsskr. norske laegefor*, 79:831-834, 1959.

Mitral Stenosis in Pregnancy: Surgical Therapy

Of 26 women aged 22-41, undergoing mitral commissurotomy between the third and sixth month of pregnancy, 16 had had term delivery, 4 therapeutic abortion alone and/or term delivery, and 6 had never been pregnant before. At operation the mitral orifice was found very small (0.4 to 1 sq. cm.) in most patients. After the operation some chest pain was felt. Pleural effusion occurred in 18 patients, and in all temperature was normal within 7 days. Atrial fibrillation developed in 3 patients previously having had sinus rhythm, but subsided within a few days. Digitalis was given in the immediate and the later postoperative period. Although there were no deaths among the women, intrauterine death occurred in one instance and spontaneous abortion in two instances. One patient was successfully delivered by Cesarean section at term. Postoperative course was very good in 21, good in 3, and fair in 2 cases. There were no postoperative rheumatic episodes.

Dato, A. A., et al., *Minerva med.*, 50:1905-1918,1959.

Effectiveness of Antimalarials In Sjogren's Syndrome

Seventeen of 25 patients afflicted with Sjogren's syndrome (characterized by a decrease in secretions from the salivary and lacrimal glands) and from the submucous glands of the respiratory and upper alimentary tracts benefited from treatment with chloroquine (Aralen) or hydroxychloroquine (Plaquenil) or both. Sjogren's syndrome is apparently a form of lupus erythematosus and therapy with these agents was tried because of their demonstrated effectiveness in treating both lupus and rheumatoid arthritis. The 25 patients had previously been treated by orthodox methods, often for many years, with only slight benefit. A degree of relief was afforded 17 patients, five of whom were greatly improved. Typical of the antimalarials' slow mode of action, improvement was rarely noticed until four to eight weeks of treatment. Ocular irritation was diminished first, then photophobia. Eye moisture was restored, the conjunctiva became less red, corneal appearance improved and the typical staining of the cornea and conjunctiva with Bengal rose lessened. The patients felt generally better, including those who had received eye radiotherapy. The amelioration of arthritic symptoms was considered one of the most remarkable features of treatment. In this series hydroxychloroquine produced fewer side effects than chloroquine.

Heaton, J. M., *Brit. M.J.*, 1:1512,1959.

Circulatory Effects of Nylidrin Hydrochloride

This agent (Arlidin) was given to 25 ambulatory patients, aged 30 to 74, with intermittent claudication and other symptoms of ischemia of the limbs associated with arteriosclerosis. In all patients, studies of circulation to the peripheral muscular areas were made before and after 5 mg. of nylidrin intramuscularly or intravenously. In addition 20 patients were given the drug orally, 6 mg. three times daily, to determine if side effects would occur. Clearance of I^{131} from muscle was definitely increased and calf muscle flow, measured plethysomographically, was increased in the majority (maximum increase was 2.5 times the control).

After experimental studies in 10 rabbits which showed that the

drug was an effective vasodilator of the cerebral blood vessels, it was administered to 25 patients with evidences of cerebral vascular insufficiency. Symptoms such as vertigo, mental confusion or diplopia and murmurs over the carotid arteries were improved.

Patients occasionally complained of palpitation with the oral medication, but this did not appear detrimental in any case. None had postural hypotension, gastrointestinal symptoms, thrombosis at the site of injection or evidence of venous irritation.

Winsor, T., et al., *Am. J.M. Sc.*, 239:594-600, 1960.

Comparison of Oral Theophylline Compounds in Chronic Asthma

Aminophylline when dissolved makes a strongly alkaline solution, is hydrolysed in the stomach with the production of free theophylline, and is therefore frequently assumed to cause gastric irritation after oral administration. Within recent years many compounds of theophylline have been introduced, considered freer from the gastrointestinal side effects produced by theophylline itself or aminophylline.

In a blind trial using tablets of identical appearance containing either aminophylline or theophylline sodium glycinate (theophylline in each being 150 mg.), each bottle contained a month's supply for one patient.

The 34 patients selected were all chronic asthmatics, aged 21 to 66 (average 41). All had been using antispasmodics by mouth or inhalation regularly, and each had been observed for at least one week before being included in the trial. No patient was given the tablets if spontaneous improvement had taken place during the initial period of observation. Those selected were each given a bottle of tablets to be taken three times daily just before meals. The patients were seen every two weeks and again one month after the tablets had all been taken.

Side effects were nausea, vomiting, palpitation, headache, and dizziness, patients taking the theophylline sodium glycinate faring rather worse than those taking the aminophylline. There was no obvious difference of side effect incidence between the two groups. All except two who were considered failures stopped taking the tablets because of side effects. One of these two was taking aminophylline and the other theophylline sodium glycinate.

Theophylline sodium glycinate produced no better improvement in the asthma patients' symptoms, nor did it give fewer side effects than the aminophylline.

Pengelly, C. D. R., & Brockbank, W., *Brit. M.J.*, 2:866-867,1959.

Depressive States: Treatment with Iproniazid

Fifty-four patients (39 women and 15 men) aged 18-71 with depressive states were treated with iproniazid, 33 being hospitalized for different periods during the therapy and the remainder being outpatients. Of these 54, 15 had endogenous depression, organic depression (5 with cerebral sclerosis), 16 reactional depression due to psychologic trauma, 6 involutional depression associated with climacteric or presenile disorders, and 11 mixed depression. Iproniazid was given orally in 50 mg. tablets at a daily dose of 1 to 6 tablets. Average total dose was 7700 mg. in the reactional depression group and 12,400 mg. in the mixed depression group. Average daily dose was 112 mg. during period of intensive therapy, 50 mg. during maintenance.

Results were classified satisfactory, unsatisfactory or slight improvement. They were satisfactory in all 16 in the reactional depression group, in 5 of the 6 with involutional depression, in 8 of the 11 with mixed depression, in 4 of the 6 with organic disorder, and in 8 of the 15 with endogenous depression (including schizophrenia, mania, epilepsy). In the groups with organic and mixed depression, relapse occurred in 80 and 54.6%, respectively, of the patients having shown satisfactory improvement. Anxiety improved in the largest percentage (96.2%). Improvement was more stable in relation to anxiety, sadness and depressive ideas, less so in relation to pessimism and loss of social interest.

Tellez, A., et al., *Rev. med. Chile*, 87:430-438, 1959.

Attempted Suicide Cases Admitted to a General Hospital

Of various psychiatric groups studied in which attempted suicide was a common denominator, the main characteristic of the one group classified under acute situational maladjustment was the superficial nature of the suicidal attempt, this following an acute conflict with another person important to themselves and a mood of hostile tension resulting from the suppression of aggressive feelings. The motive, of which these patients were generally consciously aware, was

one of moral blackmail to gain a desired effect and in particular a new attitude or capitulation from the person toward whom the attempt was directed. The absence of any case of anxiety in this group is not surprising since the majority of such cases have a marked fear of death.

While every patient in this series was given a psychiatric diagnosis, there were several patients among those classified as cases of reactive depressions and acute situational maladjustments who displayed little or no psychiatric abnormality. For this reason the assumption that every person attempting suicide is psychiatrically ill lacks justification.

Twenty of the patients were found to be suffering from some disease, but in only three instances did physical disease have a clear relationship to the suicidal attempt. In these cases, intractable pain or certainty about the unfavorable outcome of some progressive disease was apparent. Excluding one case of epileptic psychosis, five patients were epileptic but not psychotic, two had been leucotomized for schizophrenia, seven had cardiovascular disease, and three had respiratory disease and two peptic ulcer at the time of examination. Six of the patients were pregnant when they attempted suicide. There were no cases where the manifest motive was escape from pregnancy, and in none was it thought advisable to terminate pregnancy on psychiatric grounds. One pregnant patient was unmarried, her conflict being marrying a man she did not love or telling her parents.

Eleven of the patients had been separated from one or the other parent or from both parents before age 14. Six of the parents had been known to be treated in a mental hospital, 13 were alcoholic and an additional 13 neurotic or psychopathic. In three instances siblings of the patients had been treated in a mental hospital, while another two were alcoholic and an additional six neurotic or psychopathic. In four cases there was a family history of suicide in a parent or sibling.

Disposition of the patients involved transfer of 26 to mental hospitals as voluntary patients, referral of 14 to a duly authorized officer with a recommendation for short-term observation, formal certification of 2, and referral of 35 to a psychiatric outpatient department. These figures indicate the desirability of psychiatric assessment of all cases of attempted suicide admitted to a general hospital.

Harrington, J. A., et al., *Brit. M.J.*, 2:463-467, 1959.

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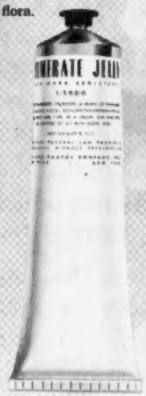

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Doctors and the Law

CHARLES J. FRANKEL, M.D., L.L.B., *Editor*

▶Is hospital expense policy a wagering contract and void as against public policy if insured had obtained numerous other hospital insurance policies which would provide total benefits greatly in excess of insured's usual earnings where none of the policies contained clause prohibiting insured from obtaining additional hospital insurance?◀

The Supreme Court of South Carolina had this issue before it in *Batchelor* vs *American Health Insurance Company,* 107 S.E. (2d) 36 (1959). On April 9, 1957, defendant insurer issued a hospital expense policy to plaintiff under which it agreed to insure him against hospital and doctor expenses incurred as a result of an accident. Insured had a gross weekly income of $65 and take home pay of $53. The plaintiff had, since 1952, been covered by a family group hospital expense policy applied for by his mother and since 1954 by a group policy obtained by his employer without cost to him. Between March 25, 1957 and May 1, 1957, plaintiff purchased eight other policies covering either hospital and surgical expenses or hospital expenses only. On April 29, 1957, the plaintiff was injured in an automobile accident as the result of which he incurred hospital and doctor expenses of approximately $1000.

Defendant asserted that a calculation of benefits provided by the various policies shows that plaintiff, if hospitalized, would receive approximately $745 per week, plus additional benefits for certain medical and hospital charges and argued that the disproportion between the amount recoverable under the various insurance contracts and the loss that could be sustained by plaintiff was so great that the only reasonable inference that could be drawn was that the plaintiff was engaged in a scheme which made all of the insurance agreements wagering contracts and, as such, void as against public policy. The Court said that a wager policy of insurance has been defined as a pretended insurance, where the insured has no interest

in the thing insured and can sustain no loss by the occurrence of the things insured against. Plaintiff here had an insurable interest in his own health and he could sustain a loss by the happening of the event against which the defendant had issued its policy. The state insurance code provides that a company has the right, where insured has insurance with other companies covering the same loss to insert, at its option, a "pro rata clause" providing that it would not be liable for any greater proportion of any loss that might occur than the amount named in the policy bears to the total amount of insurance. None of plaintiff's policies contained such a provision. The Court said there was no public policy preventing one from purchasing as many hospital expense policies as one desires because there are no statutes or court decisions prohibiting it. Plaintiff's contract with defendant is, therefore, not a wagering contract and void as against public policy and defendant is liable for the amount specified in the policy.

►*Are doctors guilty of malpractice if, in performing intravenous urography on six year old child, they use 70% Urokon solution? Are doctors guilty of malpractice if they allow 2 cc. of the solution to extravasate into the soft tissues? Are they guilty of malpractice if, when they know the solution has extravasated the soft tissues, they fail to inject hyaluronidase or some other dispersal agent into the extravasated area?*◄

These questions were passed on by the U. S. District Court for the Eastern District of Louisiana in *Trueman* vs *United States*, 180 F.Supp. 172 (1960). In order to determine the cause of her persistent vaginitis, six year old patient was brought to Army hospital for visualization of her kidneys. In the procedure, doctors used 70% Urokon solution. After injection in the upper arm failed, the doctors attempted to use the dorsum of the right hand. Since the minor patient was understandably not cooperative at this stage, one doctor held the hand rigid while the other attempted the injection. In the process, about 2 cc. of the drug extravasated into the soft tissues of the hand, causing immediate burning and puffiness. The doctors treated the extravasation conservatively over a period of time with hot compresses and elevation of the hand, rather than through use of hyaluronidase or some other dispersal agent. Physiotherapy was also used for some period of time. About 18 months after the intravenous urography, capsulotomies were performed on the second through fifth metacarpal phalangeal joints of patient's hand which somewhat improved

the hand's condition. However, there is still some limitation of flexion in the knuckle joints. There was medical evidence that the patient's hand is 25% disabled and that such disability is permanent; it is also possible that the hand will not grow normally.

The government contended that its doctors were not negligent in using the 70% Urokon solution in performing the intravenous urography on the six year old patient. The Court pointed out that the manufacturer's literature stated that such concentration was not recommended for routine use but should be reserved for difficult cases which do not show adequate shadow density when less concentrated solutions are used. In the absence of any explanation of this failure to follow the manufacturer's directions, it can be found that Army doctors were negligent in using the 70% solution.

The government further contended that its doctors were not negligent in allowing the Urokon solution to extravasate to the extent it did. However, the government's own expert testified that Urokon should be injected slowly, and that if he is careful, a doctor will realize when even one-half cc. is extravasated. Here 2 cc. was admittedly extravasated. The government's suggestion that the patient moved her hand, causing the needle to leave the vein, is no defense because it was one participating doctor's sole duty to restrain such movement and there is no explanation of his failure to restrain the movement.

The Court also rejected the government's final contention that its doctors were not negligent when they failed to comply with the manufacturer's directions to dilute and disperse the Urokon by injection of hyaluronidase or some other dispersal agent into the extravasated area. The fact that the child was difficult to inject does not excuse the doctors' failure to take the recommended action, knowing, as they should have known, that it would, and as it did in this case, cause fibrosis of the tissues.

►*Can restrictive covenant of agreement of association between dentists be enforced if, pursuant to other provisions of agreement, one seeking to enforce covenant had terminated the agreement after three months because the parties did not "hit it off" too well?*◄

This question was before the Supreme Court of Georgia in 1959 (*Howard* vs *Hader*, 109 S.E. (2d) 589). Plaintiff dentist hired defendant to assist him in his practice. The agreement of association provided that defendant would be paid 60% of receipts from professional services

rendered by him, with a guaranteed weekly minimum. It also provided for a six month trial period and for an examination of the books every three months, with a view to possible changes in financial arrangements at such times. The agreement contained the further provision that defendant would refrain from practicing dentistry within a two mile radius of plaintiff's office while the agreement was in force and for three years from the date of the dissolution thereof. After the agreement had been in force slightly less than three months, plaintiff terminated defendant's services. Shortly thereafter, defendant opened an office next door to plaintiff's and engaged in the practice of dentistry. Plaintiff sought to enjoin defendant's practice on the ground that it violated the restrictive covenant of the agreement of association. Plaintiff contended the six month trial period applied only to the financial arrangement and did not apply to the restrictive covenant. The Court said this contention was without merit. The changing of the financial arrangements at the end of any three month period is provided for directly following the six months provision. The six months provision clearly refers to and was intended to refer to the entire contract. When plaintiff terminated the agreement before the end of the six month period, the restrictive covenant was terminated with the rest of the agreement and was no longer binding on defendant. Plaintiff is, therefore, not entitled to have defendant enjoined from practicing.

►*Is doctor, employed on salary basis by another doctor who operates clinic at a hospital, required to pay license fee imposed by city ordinance providing that "owner" of business or profession must be licensed and pay license fee?*◄

The Delaware Supreme Court passed on this question in *Mayor and Council of Wilmington* vs *Dukes,* 157 A. (2d) 789 (1960). A state statute authorized plaintiff city to pass an ordinance or ordinances requiring licenses and license fees from the owner of any business, profession or calling carried on within the corporate limits. City ordinance passed pursuant to this statute listed practice of medicine as one thing for which license and license fee were required. Defendant, who is a licensed doctor employed on a salary basis by another doctor who operates a clinic in a hospital, contended that he was not subject to the license fee because he was an employee and "owned" nothing in the sense that that word is used in the statute; he claimed that he was merely an employee.

The Court said that a secretary or technician working under a doctor's direct supervision would not be practicing medicine and would not be considered the "owner" of a profession and that the employee of an owner of a business would not be required to procure a license. Here, however, defendant is unquestionably carrying on the practice of medicine. The fact that he is employed on a salary basis by another doctor does not change his position in the least. Defendant alone is the "owner" of his profession, not the hospital or the doctor by whom he is employed. He is the one who in ministering to the patients he attends at the clinic is practicing medicine. Defendant argued that the Court, as it interpreted the statute, was not giving the word "owner" its ordinary meaning; the Court countered this argument by pointing out that it would also not be giving the word its ordinary meaning if it gave it the meaning of "employee" as requested by defendant. The primary rule of construction is to ascertain and give effect to the intent of the legislature as expressed in the statute, even though such interpretation is not consistent with the strict letter of the statute. While the language of the statute was inartistic, it was unquestionably the intent of the legislature to provide that one engaged in the practice of a profession is the "owner" of that profession in the sense that he may be compelled to take out a license in order to practice that profession. To give any other construction to the statute would render it meaningless. Defendant is, therefore, subject to the licensing requirement and the license fee imposed by the ordinance.

►*Is general practitioner, who has had extensive experience, guilty of malpractice if he fails to call in specialist when, in reducing fracture, he is unable to get a combination of proper alignment and no impairment of circulation?*◄

The Supreme Court of Minnesota passed on this question in *Manion* vs *Tweedy*, 100 N.W. (2d) 124 (1959). When the butt end of a large tree he was felling struck him on knee, tibia and fibula of plaintiff's left leg were fractured. There was a spiral fracture with fragmentation, a 1½-2 inch long fracture of the tibia just above the ankle joint, and a fracture of the fibula running down into the joint. Defendant testified that in the process of reducing fracture a nearly perfect anatomic alignment of the fractured bones was secured by gentle hand traction and manipulation, but that when this was done the blood circulation was impaired to such an extent

that the toes became dusky and discolored and he was unable to feel the pulse at the dorsal pedis artery in the foot. The fractures had to be moved out of their perfect alignment to relieve the constriction and the cast was placed on the leg with the foot in a slightly "cocked" position in the hope that later it would be possible to get the bones back into a good position. Defendant, in two later attempts to align the fragments, encountered the same circulatory trouble. The leg was recast with the foot in a cocked position. When further X-rays showed there was a lateral angulation of about half an inch at the point of the fracture, but that the forward and backward alignment was good, no further manipulation was attempted since the fracture then had begun to heal. There is no dispute that plaintiff's foot healed in the position in which it was placed with some angulation.

Plaintiff contended defendant was negligent in not having called in a specialist. In support of his contention, plaintiff relied on the general rule that a general practitioner, who discovers, or should know or discover, that his patient's ailment is beyond his knowledge or technical skill, or ability or capacity to treat with a likelihood of reasonable success, is under a duty to disclose the situation to his patient and advise him of the necessity of other or different treatment. The Court said this general rule was not applicable here because there was no showing that a doctor of defendant's training and experience would be incapable of understanding or handling the circulatory difficulty that was encountered. Defendant had received his medical education at a recognized school, had practiced for approximately 20 years and had had considerable experience in reducing fractures of all kinds by the various methods known to the medical profession. Not every treatment of a patient that turns out to be less than a complete success gives rise to a malpractice cause of action merely because the attending doctor failed to consult a specialist. To adopt the rule urged by plaintiff would impose upon every general practitioner the duty of consulting with a specialist on every conceivable complication that might arise in the practice of his profession. Only at his peril could he rely on his own experience and knowledge in proceeding according to his own judgment as to what the ailment might require by way of treatment. The Court said that such has not been the law and that it was not going to adopt it as the law now.◀

The Doctor Builds His Estate

Prepared monthly by the Research Department of Bache & Co., 36 Wall Street, New York 5.

►These monthly articles point out one method by which the physician may overcome the handicap imposed upon him by taxes on the bulk of his income at normal rates, as opposed to the capital gains tax open to many business men. One solution is systematic investment of current income in securities.◄

The U.S. economy has been moving along a plateau-like course, balancing a relatively poor performance from one segment of the business community with a comparatively favorable showing from another segment. Steel operations are lagging but auto sales are holding steady. Capital construction plans appear to be topping out but home construction is slowly rising from its early year low. Nondurable goods are selling well on the retail level but durable goods, particularly appliances, are not showing to advantage. Employment is up 1.2 million over a year ago, but manufacturers' inventories are getting heavy.

Thus, for every firming trend, there is a soft spot, for every favorable indicator there is an equally unfavorable one.

The overriding characteristic which these conditions bring about is investor uncertainty. Investors wish to participate in the growth of the national economy but, on the other hand, a nagging feeling persists for many that the timing for security purchases may be inopportune. The investor is torn between a desire for appreciation and the need to protect his principal.

For this uncertain investor in an uncertain era, the tailor-made solution is investment in "defensive" stocks, those that are highly immune to any swings in the business cycle and which still can offer chances for appreciation. Four securities are discussed this month, three of which fit inherently into the abovementioned category and the fourth because of having come through

its private recession in 1958-59. They are R. J. Reynolds Tobacco, Metropolitan Bank of Miami, Beneficial Finance Co. and Oxford Paper Co.

Reynolds Tobacco

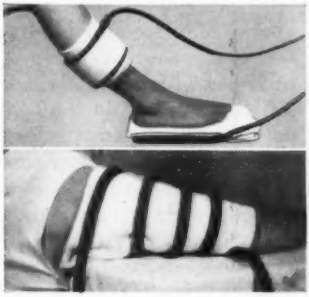
R. J. Reynolds is an attractive growth equity with defensive characteristics. In sales and earnings, the company has outperformed the tobacco industry, and its operating margins and the return on invested capital outdistance those of all of its competitors. In each of the past six years, the company has increased its dividend, reflecting higher per-share earnings. This year, the firm should report record revenues with per-share earnings of $5.00, up from $4.45 last year, with a moderate hike in dividends likely. At only 14 times anticipated earnings and with an historical growth rate in earnings of 15%, the stock appears undervalued and is an excellent vehicle for long-term growth.

Reynolds markets the leading products in several of the major cigarette categories and is the industry's leader, accounting for roughly 30% of the cigarettes sold last year. Camel, of course, is their principal brand, making up 46.5% of the company's sales. Last year it showed increased sales despite a declining market for regular cigarettes. Reynolds' product mix is, however, weighted slightly toward the filter brands, with Winston, the leading filter tip, acocunting for about 33% of their cigarette output and Salem, the major mentholated brand, making up 20% of sales. These three brands all showed gains during 1959 and further increases are looked for this year. Reynolds also markets Cavalier cigarettes, Prince Albert smoking tobacco, and several brands of chewing tobacco. The Archer Aluminum Division processes aluminum foil used by the company (and also sold to others) and makes additional packaging materials. The company's four brands of cigarettes account for roughly 95% of volume.

Reynolds has always eschewed health claims in its advertising and stressed the satisfaction to be derived from smoking. Pressure from the Federal Trade Commission led to the dropping of health claims in cigarette advertising generally earlier this year, a factor which has affected most of the other companies' marketing policies, but which obviously will have little effect on Reynolds' merchandising.

In 1956-57, the company began a major expansion program which is expected to be completed in 1961. Some $73 million has been spent on capital expenditures in the last three

Contour applicator provides smooth, continuous surface for treatment of curved areas. With rubber-covered electrodes or induction cable limbs may be effectively heated.



The MF-49's unique circuit design permits the use of full-power tube output for deep heating and treatment of large areas. Frequency is controlled by a separate tube circuit unaffected by the operating characteristics of the patient circuit. This results in high output relative to tube input.

Burdick

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years, with another $25 million scheduled for 1960. This program has been financed entirely by internally generated funds. By 1961, when the program is to be completed, capital expenditures should drop below the $12 million level. The company's substantial cash flow can then be used for new acquisitions or diversification, an increased payout to stockholders, or perhaps a shrinking of some of the senior securities outstanding. This capital expenditure program is expected to increase the company's capacity this year by 25% over 1959, and will enable Reynolds to run on regular production schedules instead of the overtime pace at which its plants are now operating. By the end of their program, cigarette capacity should be double that of 1956-57.

Reynolds' sales have shown a 58% increase from the past six years, compared to a 34% gain for the tobacco industry. Reynolds' net income after tax rose 101% versus 70% for all tobacco companies. Moreover, Reynolds has expanded its profit margins from 5.51% to 7.02% over the period, with particularly rapid gains in the past two years.

What's more, Reynolds' accounting system is highly conservative. In 1957, Reynolds alone in the industry switched from an average cost system of inventory evaluation to a LIFO basis. The drop in margins in 1957, incidentally, was due to this accounting change. Under the then, and now, prevailing conditions of increasing tobacco leaf costs, the higher current costs of tobacco are taken against current revenues, resulting in lower reported earnings, lower taxes and a decrease in margins.

Operating margins and return on invested capital have outdistanced the industry. This is due to the company's excellent management, centralized operations and the economics of large-scale production. Higher costs, due to steadily increasing tobacco leaf prices, have been offset to some extent by use of reconstituted leaf tobacco, which allows for greater utilization of tobacco purchases, the shrinking diameter of cigarettes and the greater percentage of sales going to the filter tip cigarettes which sell for higher prices and carry the larger margin of profit.

The cancer scare had its impact on the rate of growth in cigarette output in 1954-55. Since then, despite this health issue people have continued to consume more cigarettes yearly. The major effect of the cancer scare thus appears to have been the lowering of the price-earnings multiple of the group despite sales and earnings growth. While we are in no position to

NO SPRAIN,
NO STRAIN,
NO LOW
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RELA achieves the necessary interruption of the spasm/pain cycle through its unique twofold myogesic[X] action.

RELA restores mobility by relieving stiffness, pain and spasm.

Bibliography: 1. Ostrowski, J. P.: Orthopedics **2**:7 (Jan.) 1960. 2. Kestler, O. C.: J.A.M.A. 171:2039 (April 30) 1960. 3. Frankel, K.: Paper presented at Scientific Meeting, New York State Society of Industrial Medicine, Inc., New York, Sept. 30, 1959.

Schering

M-296

XMYOGESIC: MUSCLE RELAXANT ANALGESIC

R. J. Reynolds Tobacco

Price	70¾	Capitalization (12/31/59)	
Dividend	$2.20	Long Term Debt	$92,000,000
Yield	3.1%	Preferred Stock (3.60 Cum $100 par)	340,768 shs.
Traded	N.Y.S.E.	Common Stock ($5.00 par)	20,000,000 shs.

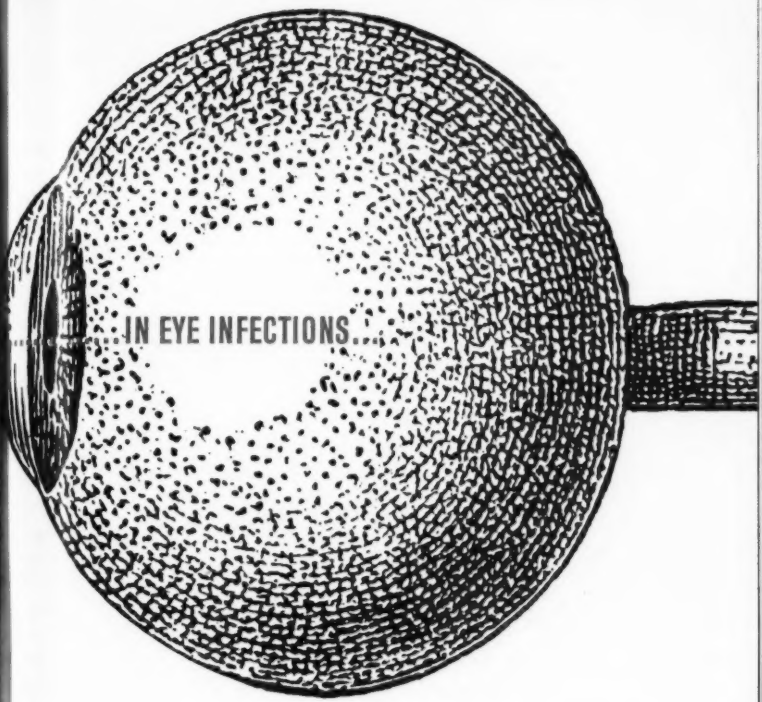
determine whether or not there is a positive link between lung cancer and smoking, it is quite likely that when and if the causative factors in tobacco were found, they could be eliminated. Thus, there appears to be little imminent danger that cigarette smoking will suddenly decline in popularity or that major companies will be forced out of business—but, rather, a growth in consumption equal to that shown in past years is anticipated.

Oxford Paper Co.

The second stock under discussion is Oxford Paper. Until 1956 the company had demonstrated a satisfactory rate of growth in both sales and earnings. Revenues in 1956 reached almost $62 million while net income reached a peak of $5.43 per share. In the last three years, however, a number of factors, some non-recurring, combined to cause earnings to slip to only $1.77 in 1959. At this juncture, however, Oxford seems to have overcome the bulk of its problems and now seems to be in a good position to capitalize on its large earnings potential. Earnings this year should rise to $2.50-$3.00 per share. By 1961-3, assuming reasonably good general business conditions, Oxford should once again record net income of $4-$5 per share. At current depressed price levels, therefore, we regard the shares as attractive for both intermediate and long term capital gains with minimum downside risk.

Oxford Paper is a leading producer of high quality publication papers. Magazine and book publishers and commercial printing concerns represent Oxford's most important outlets. Growth in advertising expenditures and expansion in demand for books created by the burgeoning school population are among the most significant factors contributing to Oxford's sustained revenue growth. Many of Oxford's customers have been supplied by the company for 25 years or longer and represent some of the best-known names in magazine and book publishing.

In order to prepare for the



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©CHLOROMYCETIN® (chloramphenicol, Parke-Davis) – polymyxin B – hydrocortisone ophthalmic ointment

In the treatment of ocular infections, OPHTHOCORT Ophthalmic Ointment offers these significant therapeutic benefits: Prompt antibacterial and anti-inflammatory action • Good results against gram-negative as well as gram-positive invaders • Steroid protection against inflammation, discomfort, and possible scarring of ocular tissues • Virtual absence of irritative or allergic properties

OPHTHOCORT is intended for the topical treatment of ocular inflammation complicated by infection. It is administered by local application two to four times daily, as required.

OPHTHOCORT Ophthalmic Ointment contains 1% CHLOROMYCETIN (chloramphenicol, Parke-Davis), 0.5% hydrocortisone acetate, and 5,000 units polymyxin B sulfate per Gm.; supplied in ⅛-oz. tubes.

PARKE, DAVIS & COMPANY
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PARKE-DAVIS

OXFORD PAPER

		Capitalization	
Price	28½	Long Term Debt	$23,327,500
Dividend	$1.00	$5 Cum. Pfd.	101,434 shs.
Yield	3.5%	Common ($15 par)	1,006,434 shs.
Traded	N.Y.S.E.		

decade of growth expected during the 1960's, Oxford commenced a capital expansion program of major proportions in 1956. Including an acquisition, Oxford's gross property account jumped from about $67 million at the end of 1956 to almost $97 million by the end of 1960.

The expansion program involved increases in productive capacity for paper, additional and improved pulp-making facilities and other important process improvements designed to increase operating efficiencies. This program was so large in terms of previously existing capacity that considerable charges to earnings in the form of depreciation, interest and start-up expenses had to be incurred before the new equipment could become productive of new revenues. To a large extent, such expenses explain the earnings slide of the past few years.

In addition to heavy, non-recurring plant start-up charges, Oxford's earnings were also hurt by the general economic recession of 1957-58 and inability to increase selling prices during a period of rising operating costs. By 1959, with demand again on the upgrade, price increases of $10 per ton were effected. Further increases of similar proportions went into effect in January and April of 1960. Unusual problems connected with the starting up of the new North Star Coater, which seriously drained 1959 earnings are now reported well under control with that equipment now contributing to, rather than detracting from, current earnings.

In the first quarter of 1960, Oxford's sales increased 8.3% to $19.5 million while net income before taxes leaped more than 60%. Per-share earnings were reported at 63¢ compared with 43¢ in the first period of 1959. Oxford's pre-tax earnings in the initial 1960 quarter were the best showing since early 1957, the date of the onset of the company's recent troubles. Considering that the April 1, 1960 price increase has yet to be reflected in company reports, we believe earnings of at least $2.50 for 1960, compared with $1.77 last year, are reasonable. Income of closer to the $3.00 rate is also possible by the end of the year assuming

reasonably good economic conditions. Non-cash depreciation charges, incidentally, are running close to $4.00 per share so that total cash flow in 1960 should be in excess of $6.50 per share.

Metropolitan Bank of Miami

The third security in our study is the Metropolitan Bank of Miami. In its six-year history, Metropolitan Bank of Miami, measured in terms of deposits, has grown to be Dade County's twelfth largest bank. During the past two years, the Bank has demonstrated the highest rate of growth in the United States among all banks with over $20 million in deposits, according to figures prepared by the American Banker. The prospects for continued growth of both deposits and earnings remain excellent.

Metropolitan Bank offers complete banking facilities at its offices in downtown Miami. In the past year, the premises of the Bank were modernized and a substantial amount of labor-saving equipment was installed. The Bank also acquired under lease, an additional floor of the building which they occupy, giving them more room to expand services. This expansion adds about one-third more floor space to Metropolitan's existing facilities.

Last year, Metropolitan was the first bank in Miami to introduce the "check credit plan." Over 1,300 Redi-Credit accounts were opened in which there is an aggregate loan balance of about $750,000. Continued growth is anticipated from this area. The Bank is a member of the Federal Reserve System and its deposits are insured by the Federal Deposit Insurance Corp. to the extent provided by law. The Bank's growth factor is impressive. Total deposits last year jumped 20% to $25.9 million, up from the $21.1 million level in 1958. Of the $4.9 million increase, $3.0 million was gained in individual demand deposits and $2.2 million in time deposits. Other deposits declined.

Of even more significance than the growth in deposits was the rise in loans to $14.0 million as of the year-end 1959. This represented a 43.4% increase and accounted for the major portion of sharply expanded earnings. The increase in earning assets pushed gross income up to $1.2 million from $793,000 in 1958. Net operating earnings also showed a sharp increase from the year earlier results.

The outlook for Metropolitan Bank of Miami is highly favorable based on the combination of excellent bank operating conditions and long-term growth possibilities for the Miami area.

METROPOLITAN BANK OF MIAMI

Approximate Market	20
Dividend	80¢
Yield	4%
Traded	O.T.C.

Capitalization

Capital Stock ($10 par)	165,000 shs.
Surplus and Undivided Profits	$708,000

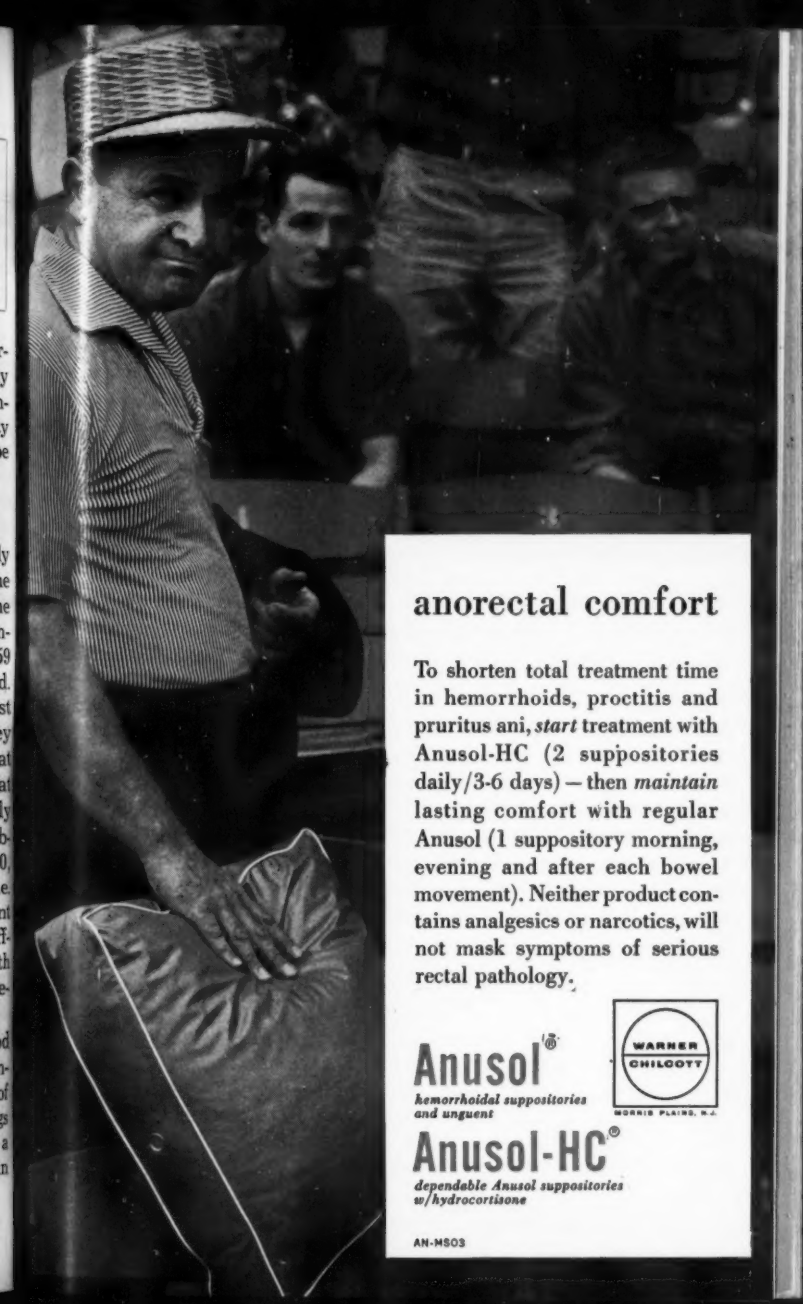
Furthermore, with interest rates now at the highest levels in the past 25 years, another favorable year can be forecast for 1960. Several other factors point out a continuation of the growth picture in Metropolitan Bank. The company, during 1959, advanced in the development of international business, principally in Latin America. Metropolitan now has correspondent banks in many Latin American cities, and some substantial deposit balances have been brought into the bank as a direct result.

As of 1959 year-end, Metropolitan showed the greatest growth in deposits of any downtown Miami bank. Over 2.9 million checks were processed compared with 2.1 million in 1958. Loans have increased 232% and deposits and discounts have increased 152% in the Bank's six year history. Net operating earnings have increased 294% in the past four years. The dividend rate has been increased four times in the six-year period. In 1959, the rate of return on capital funds was 13.4% and has shown consistent increases during the past four years. Operating income is proceeding nicely this year and, if the trend continues, there is a good possibility that a year-end extra will be paid.

Beneficial Finance Co.

The final stock in our study is the Beneficial Finance Co., the second largest company in the small loan field. Small loan companies had a good year in 1959 as far as volume was concerned. However, much higher interest rates resulting from tight money cut into profit margins so that gains in net were not as great as those in gross. Since fairly tight money conditions will probably persist throughout 1960, this trend will likely continue. However, the increasing amount of new loans written should offset the narrower margins with further year-to-year gains recorded this year.

Beneficial offers investors good defensive characteristics, reasonable yield and possibilities of moderate capital gains. Earnings in 1959 amounted to $2.21 a share, compared with $2.02 in



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Anusol®
hemorrhoidal suppositories and unguent

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dependable Anusol suppositories w/hydrocortisone

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MORRIS PLAINS, N.J.

AN-MS03

BENEFICIAL FINANCE CO.

Price	29¼
Dividend	$1.00
Yield	3.4%
Traded	N.Y.S.E.

Capitalization

Long Term Debt	$327,522,000
$2.50 Cum. Pref. Stock, ($50 par)	586,213 shs.
Common Stock ($1 par)	10,014,487 shs.

29.7% owned by Beneficial Corp.

1958 and $1.89 in 1957. Earnings this year should reach the $2.35-$2.50 level. The defensive character of the shares stems from the company's proven ability to maintain earnings during periods of poor business conditions generally, combined with the low multiples given to earnings.

The volume of loans made in 1959 rose 8.6% to a new high, and outstanding receivables showed about the same gain. Gross income increased 4.4%. With operating expenses under excellent control, profit margins widened on the larger business volume. Interest costs, while higher, increased only moderately since the company relies on short-term borrowings for only about 10% of funds used in the business.

Under projected economic conditions, continued strong demand for consumer credit is in prospect, and business volume will be aided also by new branches in operation. Profit margins should be well maintained in view of the company's demonstrated ability to hold down expenses. Impact of higher interest rates is relatively light because of the company's favorable financial position.

As to the branch office system mentioned above, Beneficial opened its 1,200th office in November, 1959, at Kealakekua, Hawaii. A total of 68 offices were added to the system during 1959. Of these, 28 were opened in California, continuing the expansion in that state which has marked the past several years. Montana joined the list of states having workable small-loan legislation and at year-end Beneficial offices were serving an equal number of cities there. Various other states amended their regulatory statutes in 1959 to provide for larger maximum loan amounts, or for the sale of credit life insurance protection, or for precomputation of charges as an alternative to the cumbersome percent-per-month computation of interest.

Recently, Beneficial revealed plans to buy almost half the common stock of Western Auto Supply Co., Kansas City, for about

$50 million. The company's board of directors authorized the purchase of about 1.4 million shares or approximately 47% of Western Auto's outstanding stock from Gamble-Skogmo, Inc., a Minneapolis-based auto chain. The stock would be purchased at $36 per share.

Western Auto Supply Co., a nationwide merchandising chain, operates through more than 400 company-owned stores and about 3700 franchised dealer stores. Last year its net income was equal to $2.92 per share on sales exceeding $265 million. Acquisition of the Western Auto shares is expected to provide to Beneficial a diversification of financial interests by means of investment in a long established company.◀

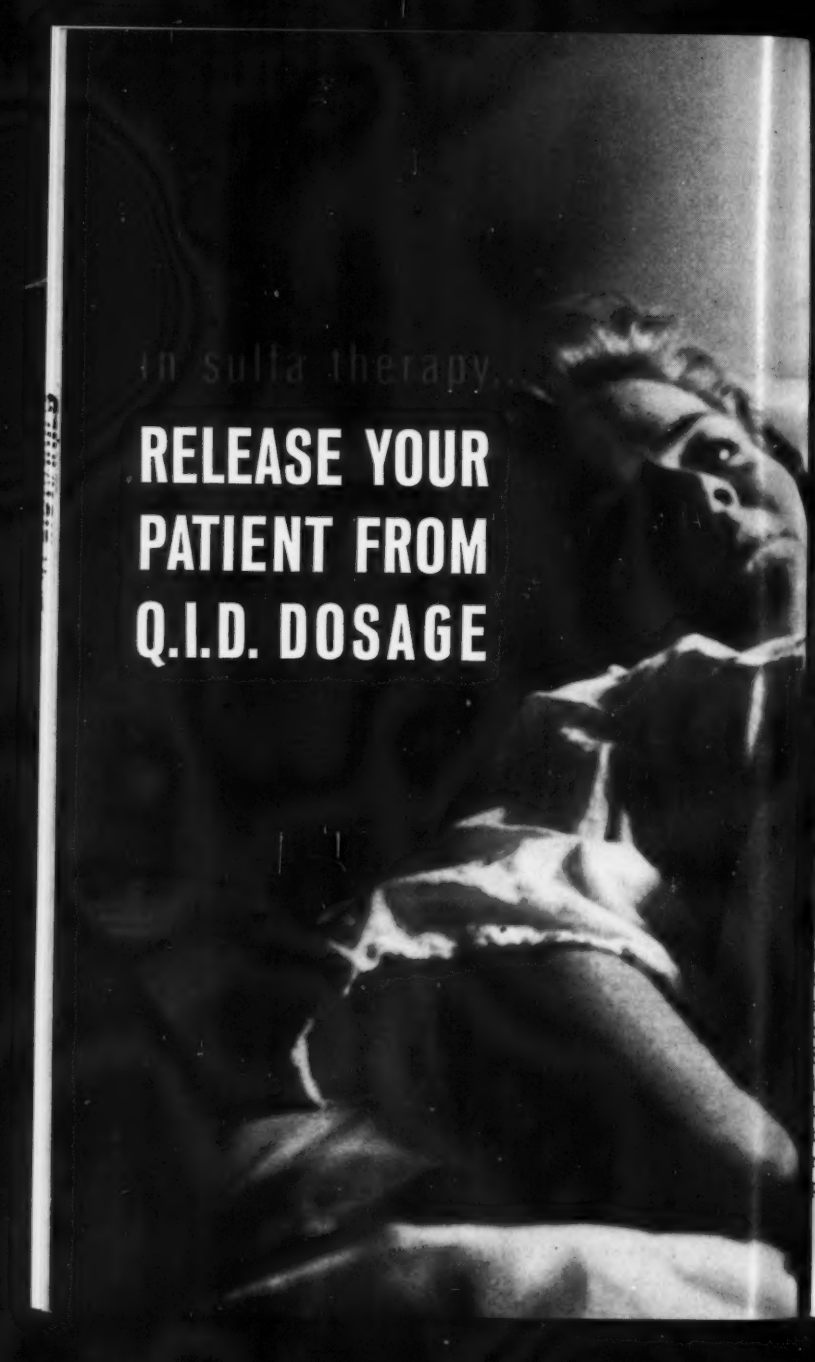
Hypnosis in Dermatologic Therapy

The technique of inducing hypnosis is not difficult and may be executed in numerous ways. One should be concerned not only with learning how to hypnotize but in acquiring a basic knowledge of normal, abnormal and applied psychology. Without the latter, hypnosis is dangerous.

In many dermatoses the underlying emotional disturbances are not difficult to discover with the aid of hypnosis. Shallow psychotherapy is an adjunct in the treatment of many dermatoses. Any physician should offer this procedure in proportion to his ability. Effectiveness depends on the qualifications of both patient and physician. Improvement obtained during the hypnotic trance will carry over to remain in the conscious state in psychosomatic dermatoses and in many organic conditions. Effectiveness of the posthypnotic suggestion depends upon the depth of the trance, the nature of the suggestion, the technique employed, and the personal reaction of the subject. A suggestion may remain in effect only a few minutes or persist a lifetime. Effectiveness of the suggestion can be increased by repetition during one session or reinforced by additional sessions.

Results with hypnotherapy have been generally very satisfactory in psychosomatic pruritus vulvae and ani, nummular eczema, hyperhidrosis, and neurotic excoriations. It has also proven beneficial in carefully selected cases of resistant neurodermatitis and atopic eczema, seborrhea, rosacea, alopecia areata, psoriasis, chronic urticaria, lichen planus, recurrent herpes simplex and progenitalis, verrucae and dermatitis herpetiformis.

Scott, M. J., *Northwest Med.*, 58:701-706,1959.


in sulfa therapy
RELEASE YOUR
PATIENT FROM
Q.I.D. DOSAGE

►Carbocaine Solution *(Winthrop)*

Local anesthetic available in two strengths: Solution contains either 1% or 2% of mepivacaine hydrochloride. *Indications:* For infiltration and nerve blocks (major and minor surgery, therapeutic blocks). Also for caudal and peridural anesthesia. *Dosage:* According to use. *Supplied:* 1% Solution in vials containing 30 cc. or 50 cc. 2% Solution in vials containing 50 cc.

►Depo-Medrol, 20 mg./cc. *(Upjohn)*

New dosage form. Sterile aqueous suspension, additional parenteral dosage form of *Medrol.* Each cc. contains 20 mg. of methylprednisolone acetate suspended in sodium chloride injection with suitable suspending and preservative agents. *Indications:* Locally it is used for intra-articular, intrabursal, intratendinous and intralesional therapy. Systemically it is administered intramuscularly and by continuous drip for intrarectal administration. *Dosage:* According to the requirements of the individual patient. *Supplied:* In 5 cc. vials.

►Disophrin Tablets *(White)*

Antihistamine-decongestant. Each tablet contains dexbrompheniramine maleate, 2 mg., and d-isoephedrine, 60 mg. *Indications:* Seasonal and perennial nasal allergies, acute and subacute sinusitis, eustachian tube congestion, acute rhinitis and rhinosinusitis. *Caution:* Use with caution in hypertensive patients. *Dosage:* Adults and older children, one tablet four times daily, occasionally two tablets three times a day. Children six to 12 years, ½ tablet four times daily. *Supplied:* In bottles containing 100 tablets.

►Ircon Tablets *(Lakeside)*

Each tablet contains 200 mg. of the iron salt ferrous fumarate. Each tablet provides the equivalent of 65 mg. of elemental iron. *Indications:* Prophylaxis and treatment of iron deficiency anemias resulting from inadequate iron intake or from blood loss. *Dosage:* Adults, three to four tablets daily. *Caution:* Use with care in the presence of peptic ulcer, regional enteritis and ulcerative colitis. *Supplied:* In bottles containing 100 tablets.

for hot weather ears

the FURACIN forecast: immediate relief, rapid clearing

FURACIN Ear solution provides rapid bactericidal action against most of the organisms encountered in otitis externa and media.[1,2] It acts quickly to lessen pain, itching, malodor and drainage—even in patients who had previously been refractory to other agents.[3] Intended for topical application only, FURACIN obviates complications which may result from the local administration of agents widely used for systemic therapy.[4]

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broadly bactericidal—even in tissue exudates / negligible bacterial resistance / nonirritating / slightly viscid—does not evaporate / water-soluble—facilitates cleansing / odorless and nonstaining / anhydrous

Formula: FURACIN 0.2% in hygroscopic, water-soluble, anhydrous polyethylene glycol. *Supply:* Dropper bottle of 15 cc.

References: 1. Alonso, M.: Bol. As. Med. Puerto Rico 50:105, 1958. 2. Benton, C. D., Jr.: South. M. J. 48:546, 1955. 3. Peele, J. C.: Laryngoscope 63:488, 1953. 4. Leopold, I. H.: J. M. Soc. N. Jersey 53:213, 1956.

THE NITROFURANS—a *unique* class of antimicrobials . . . neither antibiotics nor sulfonamides

EATON LABORATORIES, NORWICH, NEW YORK

▶Triburon Hydrocortisone Cream 1% *(Roche)*

New dosage form. Cream contains 0.1% *Triburon* plus 1% hydrocortisone in a vanishing cream base. *Indications:* For the prevention and control of primary and secondary skin and wound infections such as pyodermas, infected dermatoses, pustular folliculitis and infected burns. Of use whenever the anti-inflammatory, antipruritic action of a steroid is indicated. *Dosage:* Apply gently to the affected area three to four times daily. *Supplied:* In 5-gm. and 15-gm. tubes.

▶Adabee Tablets *(Robins)*

Each tablet contains therapeutic quantities of vitamins A, D, Ascorbic Acid and B-Complex. *Indications:* As a dietary supplement in the treatment of numerous vitamin deficiency states. Does not contain folic acid. *Dosage:* One or two tablets daily. *Supplied:* In bottles containing 100 or 500 tablets.

▶Prelu-Vite Capsules *(Geigy)*

Each capsule contains 25 mg. of phenmetrazine plus vitamins and minerals. *Indications:* Where the administration of vitamins and minerals is desired in combination with an appetite suppressant for the control of obesity. *Dosage:* Usual adult dosage is one capsule given two to three times daily, one hour before meals. Because of variations in eating habits and appetite peak patterns it is advisable to adjust the dosage schedule to the requirements of the individual patient. *Supplied:* In bottles containing 100 capsules.

▶Esidrix-K *(Ciba)*

Each tablet contains 25 mg. of hydrochlorothiazide and 500 mg. of potassium chloride. *Indications:* To remove excess fluid from patients who require potassium protection. *Dosage:* According to the individual requirements of the patient. *Supplied:* In bottles containing 100 tablets.

►Donnagel-PG Suspension
(Robins)

Anti-diarrhea therapy. Each 30 cc. contains po. opium, USP, 24 mg.; kaolin, 6 gm.; pectin 142.8 mg.; hyoscyamine sulfate, 0.1037 mg.; atropine sulfate, 0.0194 mg.; hyoscine HBr, 0.0065 mg.; phenobarbital, 16.2 mg. *Indications:* For symptomatic control of acute, non-specific diarrheas. *Dosage:* Adults, two tablespoonfuls every three hours. Children, two teaspoonfuls every three hours. *Supplied:* In bottles containing six ounces.

►Compligen Injection
(Pitman-Moore)

A multiple antigen vaccine containing aluminum phosphate absorbed diphtheria toxoid, tetanus toxoid and poliomyelitis vaccine with pertussis vaccine (D.P.T. plus Polio). *Indications:* For primary immunization of infants and children, 1 month to 5 years, against tetanus, diphtheria, pertussis and the three types of virus which cause paralytic poliomyelitis. *Dosage:* Course consists of three intramuscular injections of 1 cc. at intervals of four to six weeks (six is recommended). A fourth injection should be given six to 12 months after completing first three. When children have been immunized in infancy, a booster dose is recommended at the age of three or four years. Give 1 grain of acetylsalicylic acid per year of age one or two hours after injection and repeat in four hours. *Supplied:* In 9 cc. multiple-dose vials.

►Neo-Medrol Eye-Ear Ointment and Drops
(Upjohn)

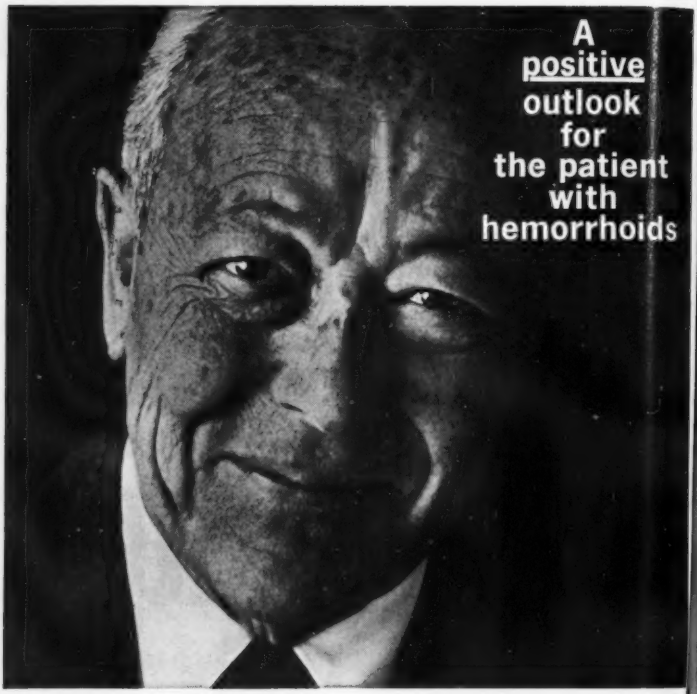
Each cc. *or* gm. contains methylprednisolone 1 mg. (0.1%) and neomycin sulfate 5 mg. (equivalent to 3.5 mg. neomycin base). *Indications:* Eye conditions: Marginal ulceration, phlyctenular keratoconjunctivitis, nonspecific and superficial keratitis, herpes zoster ophthalmicus, acne rosacea keratitis, allergic conjunctivitis, corneal abscesses, deep keratitis, sclerokeratitis, episcleritis, postoperative keratitis and postoperative and post-traumatic uveitis. External ear: Seborrheic dermatitis, contact dermatitis and infected eczematoid dermatitis. *Contraindications:* In the presence of tuberculosis infections of the eye and herpes simplex keratitis (dendritic keratitis). *Dosage:* According to the condition being treated. *Supplied:* Ointment, 0.1% in ⅛ ounce tubes. Drops, 0.1% sterile solution in 5 cc. bottles.

▶Ismelin Sulfate Tablets
(Ciba)

Antihypertensive agent, available in two strengths: Each tablet contains either 10 mg. *or* 25 mg. of guanethidine sulfate. *Indications:* In the treatment of most forms of moderate to severe hypertension, as well as certain other conditions marked by sympathetic predominance. *Precautions:* Use with caution in patients with severe coronary insufficiency or recent myocardial infarction. Therapy should not be started unless patients can be kept under careful supervision and frequent observation. *Dosage:* Individualization of dosage is essential for optimal results. *Supplied:* Either strength, in bottles containing 100 tablets.

▶Cyclex Tablets
(Merck Sharp & Dohme)

Diuretic-tranquilizer. Each tablet contains 25 mg. of hydrochlorothiazide and 200 mg. of meprobamate. *Indications:* For the management of premenstrual tension with edema. *Dosage:* One tablet once or twice daily, beginning the first morning of symptoms and continuing until onset of menses. May be continued through menstrual period. *Supplied:* In bottles containing 100 or 1000 tablets.



Hemorrhoids alone can cloud a patient's outlook, but when they are aggravated by constipation, his difficulties are compounded. One way to establish a more positive outlook is to use new Mucilose-Super to promote easy passage of normal evacuations without rectal irritation. This anticonstipation agent combines two gentle physiologic actions. Superinone®, the remarkably efficient surfactant, penetrates and softens fecal mass, while bland, emollient Mucilose absorbs water and increases stool volume—for mil reflex stimulation of the bowel. Ne Mucilose-Super usually acts withi twenty-four hours or sooner, doe not interfere with digestion or vita min absorption or provoke electrolyt imbalance.

Dosage: 1 or 2 teaspoons, once or twic daily, well stirred in a full glass of wate milk or fruit juice, followed by anothe glass of liquid.

New Mucilose-Super is available in can of 4 and 16 oz.

Winthrop LABORATORIES
New York 18, N. Y.

New Mucilose®-Super

Mucilose and Superinone (brand of tyloxapol), trademarks reg. U. S. Pat. Off.

▶Strep-Dicrysticin Fortis *(Squibb)*

Injectable penicillin with a higher dose of streptomycin. A sterile powder for aqueous intramuscular injection containing 300,000 units procaine penicillin G, fortified with 100,000 units of buffered crystalline sodium penicillin G and 1.0 gm. streptomycin (as the sulfate) per dose. *Indications:* To combat both gram-positive and gram-negative bacteria. *Dosage:* According to the requirements of the individual patient. *Supplied:* In one and five-dose vials.

▶Septiderm & Septiderm-HC Cream *(Fougera)*

Both forms contain chloroxylenol, 1%. HC Cream adds 0.5% hydrocortisone. *Indications:* Infected dermatoses: nummular eczema, seborrheic dermatitis, contact dermatitis, atopic dermatitis, infantile eczema, folliculitis, diaper rash, intertrigo. Primary infections: Impetigo, sycosis barbae, paronychia, cutaneous monilia, perleche. *Dosage:* Apply to affected areas three or four times daily or as required. Rub in gently. *Supplied:* Cream, in one ounce tubes or one pound jars. HC Cream, in ½ ounce tubes or one ounce tubes.

new and unique

tetracycline therapy / new antifungal protection in better-tasting aqueous forms

New Mysteclin-F provides antifungal protection plus antimicrobial efficacy. Its outstanding antifungal agent, Fungizone, successfully forestalls monilial overgrowth. Its broad spectrum tetracycline base brings unsurpassed antibiotic pressure to bear against a wide variety of bacterial infections. Thus, even when high or prolonged dosage is required, new Mysteclin-F may be prescribed with confidence. New Mysteclin-F, unlike bitter-tasting nystatin, has the added advantage of a pleasing, mixed fruit flavor. It is certain to win patient cooperation without coaxing. Your very young patients, so susceptible to fungal superinfections, are foremost candidates for the convenient syrup or drop form of new Mysteclin-F especially designed for children.

Supplied: Mysteclin-F For Syrup (125 mg phosphate-potentiated tetracycline [HCl equivalent] and 25 mg. amphotericin [Fungizone] per 5 cc. teaspoonful). Mysteclin-F For Aqueous Drops (100 mg phosphate-potentiated tetracycline [HCl equivalent] and 20 mg amphotericin B [Fungizone] per cc.).

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Squibb Quality—the Priceless Ingredient

'MYSTECLIN'® AND 'FUNGIZONE'® ARE SQUIBB TRADEMARKS

book reviews

►The Human Integument: Normal and Abnormal

A Symposium edited by Stephen Rothman, University of Chicago. Publication No. 54 of the American Association for the Advancement of Science, Washington, D.C. 1959. $6.75

In the last 20 years there has been an unparalleled surge of interest in skin physiology, which continues at an ever increasing rate. A great number of broadly trained investigators have been, and are devoting themselves with enthusiasm to the study of skin physiology and its application in clinical dermatology. The great attainment of the search in this field is attributed to the belief that function and structure have been correlated more in this than in many another area. In the selection of subject and speakers for this symposium an attempt was made to best illustrate the new developments. The fundamental divisions of the subject are discussed are:

The Integument as an Organ of Protection, Circulation and Vascular Reaction, Sebaceous Gland Secretion, and Pathogenetic Factors in Premalignant Conditions and Malignancies of the Skin.

►Heritable Disorders of Connective Tissue

by Victor A. McKusick, M.D., Associate Professor of Medicine, Johns Hopkins University School of Medicine, and Assistant Professor of Epidemiology, Johns Hopkins University School of Hygiene and Public Health, Baltimore. Second edition, with 80 illustrations. The C. V. Mosby Company, St. Louis. 1960. $12.00

Continued increasing interest in the disorders of this nature together with improved diagnostic techniques since publication of the first edition have prompted publication of a second edition of this memorable work. According to the author's preface: "It is especially the generalist—the general practitioner, internist and pediatrician without particular subspecialization — to whom the problems related to the several syndromes discussed here are of importance and to

whom this book is addressed." Although the greatest interest in this class of disorders is manifested by the generalists of these three kinds, this book is heartily recommended to all doctors of medicine who treat persons suffering from such disorders.

►Pyelonephritis

by Fletcher H. Colby, M.D., Consultant, Massachusetts General Hospital and Former Chief of the Urological Service and Associate Clinical Professor, Harvard Medical School. The Williams and Wilkins Company, Baltimore. 1959. $7.50

One can well agree with the statement, "pyelonephritis is one of the most important present problems of medicine," and each year it seems that its seriousness is more and more recognized. In this book the background of the disease is described and against this a summary of what is now known about it — its pathology, symptoms, diagnosis, and treatment in the acute and chronic forms. There are separate chapters on pyelonephritis in infancy and childhood, in pregnancy, in diabetes, and in association with hypertension. The high incidence of the disease in the early years of life is ascribed to the frequency of congenital defects of the genito-urinary organs. Pyuria is in many cases the only sign of kidney infection in the young, which makes this finding always deserving of serious consideration.

►Emergencies in Medical Practice

edited by C. Allen Birch, M.D., F.R.C.P., Physician, Chase Farm Hospital, Enfield. Sixth edition, with 139 illustrations in color. The Williams & Wilkins Co., Baltimore. 1960. $8.50

For this edition much revision of the text has been necessary to set forth adequately the advances in medicine of the past three years. There are four new contributors. The information on emergencies in ear, nose and throat conditions appears in one chapter, whereas heretofore it appeared in various chapters. Radiation hazards are treated according to their importance. Chapter 1, entitled "The Emergency Bag," indicates at once that the book is written by an for practical men; and such subheads as "Keeping the Patient Alive," "Outmoded Treatment," "Ruptured Mercury Bougie," "Swallowed Ryle's Tube," "Accidental Intervenous Injection" and "Accidental Injection of Toxic Dose," fully bear out this impression.